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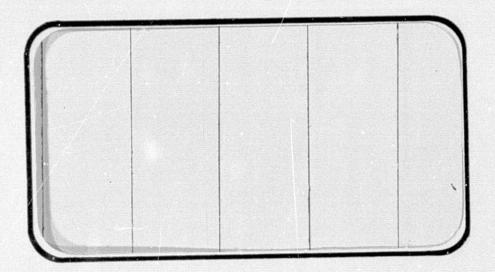
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# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



(NASA-CR-144614) RESULTS OF AN AERODYNAMIC INVESTIGATION OF A SPACE SHUTTLE ORBITER/747 CARRIER FLIGHT TEST CONFIGURATION TO DETERMINE SEPARATION CHARACTERISTICS UTILIZING 0.0125-SCALE MODELS (CHRYSLER G3/18 41823

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER HOUSTON, TEXAS

DATA MANagement services SPACE DIVISION

DMS-DR-2273 NASA CR-144,614

VOLUME 3 OF 5

RESULTS OF AN AERODYNAMIC INVESTIGATION OF A

SPACE SHUTTLE ORBITER/747 CARRIER FLIGHT TEST

CONFIGURATION TO DETERMINE SEPARATION CHARACTERISTICS

UTILIZING 0.0125-SCALE MODELS (48-0/AX1318I-1) IN

THE LTV 4 x 4-FOOT HIGH SPEED WIND TUNNEL (CA26)

bу

R. L. Gillins Shuttle Aerosciences Rockwell International Space Division

Prepared Under NASA Contract Number NAS9-13247

bу

Data Management Services Chrysler Corporation Space Division New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center National Aeronautics and Space Administration Houston, Texas

#### WIND TUNNEL TEST SPECIFICS:

Test Number:

LTV HSWT 559

NASA Series Number:

CA 26

Model Number:

48-0 Orbiter/AX1318I-1 747

Test Dates:

August 1 through August 15, 1975

Occupancy Hours:

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

RESULTS OF AN AERODYNAMIC INVESTIGATION OF A

SPACE SHUTTLE ORBITER/747 CARRIER FLIGHT TEST

CONFIGURATION TO DETERMINE SEPARATION CHARACTERISTICS

UTILIZING 0.0125-SCALE MODELS (48-0/AX13181-1) IN THE

LTV 4 x 4-FOOT HIGH SPEED WIND TUNNEL (CA26)

by

R. L. Gillins Shuttle Aerosciences Rockwell International Space Division

#### ABSTRACT

This report presents results of tests conducted on a 0.0125-scale model of the VC70-000002 Space Shuttle Orbiter and a 0.0125-scale model of the 747 CAM configuration in the LATV 4 x 4-foot High Speed Wind Tunnel. Force and moment data were obtained for each vehicle separately at a Mach number of 0.6 and for each vehicle in proximity to the other at Mach numbers of 0.3, 0.5, 0.6 and 0.7.

The enclosed data present the proximity effects of each vehicle on the other at separation distances (from the mated configuration) ranging from 1.5 feet to 75 feet; 747 Carrier angles of attack from 0 degrees to 6 degrees and angles of sideslip of 0° and -5° were tested. The Orbiter was tested in proximity to the 747 at incidence angles of 4 degrees, 6 degrees and 8 degrees and angles of sideslip of 0 degrees and ±5 degrees. The Orbiter alone was tested at angles of attack from 0 degrees to 17 degrees at angles of sideslip of 0 degrees.

## ABSTRACT (Concluded)

Model variables include orbiter elevon, aileron and body flap deflections, orbiter tailcone on and off, and 747 stabilizer and rudder deflections. The tests, designated CA26, were conducted from August 1 through August 15, 1975.

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|   | 108              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, AFE117  | E                       | 833-840 |
|   | 109              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 2.  IORB = 6, BETAC = 0, BETAO = 0, AFE118 | C                       | 841-848 |

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| 110              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, AFE119            | С                       | 849-856 |
| 111              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = -5, BETAO = -5, AFE120          | С                       | 857-864 |
| 112              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 4, IORB = 4, BETAC = 0, BETAO = 0, AFE121            | С                       | 865-872 |
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| 115              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 0, IORB = 4, BETAC = 0, BETAO = 0, AFE124            | С                       | 889-896 |
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| 117              | ORB. DATA, CARRIER PROXIMITY, ALPHAC = 0, IORB = 8, BETAC = 0, BETAO = 0, AFE126            | C                       | 905–912 |
| 118              | ORB. DATA, CAR. PROXIM., ALPHAC = 2, IORB =6, BETAC = 0, BETAO = 0, DELPHI = 7.5, AFE127    | С                       | 913-920 |
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| 124              | CARRIER ISOLATED, RFE018  | В                       | 961-968   |
| 125              | CARRIER ISOLATED, RFE019  | В                       | 969-976   |
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| 127              | CARRIER ISOLATED, RFE022  | В                       | 993-1000  |
|                  | CARRIER ISOLATED, RFE023  | В                       | 1001-1008 |
| 129              | CARRIER ISOLATED, RFE023  CARRIER ISOLATED, DELZ SWEEP, RFE024                                | C                       | 1009-1016 |
| 130              |   | D                       | 1017-1024 |
| 131              | CARRIER ISOLATED, DELX SWEEP, RFEO25  | В                       | 1025-1032 |
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| 141              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 4, BETAC = 0, BETAO = 5, RFEO35 | С                       | 1097-1104 |
| 142              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 6, BETAC = 0, BETAO = 5, RFEO36 | · C                     | 1105-1112 |
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| FIGURE<br>NUMBER | TITLE   | COEFFICIENT<br>SCHEDULE | PAGES     |
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| 193              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 4, BETAC = 0, BETAO = 0, RFE089    | c                       | 1513-1520 |
| 194              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 6, BETAC = 0, BETAO = 0, RFE090    | c                       | 1521-1528 |
| 195              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 8, BETAC = 0, BETAO = 0, RFE091    | С                       | 1529-1536 |
| 196              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4;<br>IORB = 4, BETAC = 0, BETAO = 5, RFE092 | С                       | 1537-1544 |
| 197              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 6, BETAC = 0, BETAO = 5, RFE093    | C                       | 1545-1552 |
| 198              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 8, BETAC = 0, BETAO = 5, RFE094    | С                       | 1553-1560 |
| 199              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 4, BETAC = 0, BETAO = 0, RFE095    | С                       | 1561-1568 |
| 200              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 6, BETAC = 0, BETAO = 0, RFE096    | C                       | 1569–1576 |
| 201              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4 IORB = 8, BETAC = 0, BETAO = 0, RFE097     | C                       | 1577-1584 |
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| 206              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 6, BETAC = -5, BETAO = -5, RFE102 | <b>c</b>                | 1617-1624 |
| 207              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 8, BETAC = -5, BETAO = -5, RFE103 | C                       | 1625-1632 |
| 208              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 5.5, IORB = 6, BETAC = 0, BETAO = 0, RFE104 | С                       | 1633-1640 |
| 209              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 4, BETAC = -5, BETAO = -5, RFE105 | C                       | 1641-1648 |
| 210              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 6, BETAC = -5, BETAO = -5, RFE106 | C                       | 1649-1656 |
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| 212              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BATAC = 0, BETAO = 0, RFE108   | <b>c</b>                | 1665–1672 |
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| FIGURE<br>NUMBER | TITLE  | COEFFICIENT<br>SCHEDULE | PAGES     |
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| 216              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE112   | D                       | 1697-1704 |
| 217              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, REF113   | D                       | 1705-1712 |
| 218              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE114   | D                       | 1713-1720 |
| 219              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE115   | E                       | 1721-1728 |
| 220              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE116   | E                       | 1729–1736 |
| 221              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE117   | E                       | 1737-1744 |
| 222              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE118   | С                       | 1745-1752 |
| 223              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, RFE119   | С                       | 1753-1760 |
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| FIGURE<br>NUMBER | TITLE  | COEFFICIENT<br>SCHEDULE | PAGES     |
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| 226              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 6, BETAC = 0, BETAO = 0, RFE122           | С                       | 1777-17o4 |
| 227              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 4, IORB = 8, BETAC = 0, BETAO = 0, RFE123           | С                       | 1785-1792 |
| 228              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 4, BETAC = 0, BETAO = 0, RFE124           | С                       | 1793-1800 |
| 229              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 6, BETAC = 0, BETAO = 0, RFE125           | c                       | 1801-1808 |
| 230              | CARRIER DATA, ORB. PROXIMITY, ALPHAC = 0, IORB = 8, BETAC = 0, BETAO = 0, RFE126           | С                       | 1809-1816 |
| 231              | CAR. DATA, ORB. PROXIM., ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, DELPHI = 7.5, RFE127  | С                       | 1817-1824 |
| 232              | CAR. DATA. ORB. PROXIM., ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 0, DELPHI = 7.5, RFE128  | С                       | 1825-1832 |
| 233              | CAR. DATA, ORB. PROXIM., ALPHAC = 2, IORB = 6, BETAC = 0, BETAO = 5, DELPHI = 7.5, RFE129  | С                       | 1833-1840 |
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| 236    | LAT-DIRECT AERO VS DELZ, ALPHA747 = 2.0                   | A                       | BETAO, BETAC          | 1879-1893 |
| 237    | LAT-DIRECT AERO VS DELZ, ALPHA747 = 4.0                   | A                       | BETAO, BETAC          | 1894-1908 |
| 238    | LAT-DIRECT AERO VS DELZ, ALPHA747 = 0.0, DELBETA = 5.0    |                         |                       | 1000      |
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| 240    | LAT-DIRECT AERO VS DELZ. ALPHA747 = 4.0,<br>DELBETA = 5.0 | n                       |                       |           |

- (A) CY, CYN, CBL, CPS1, CPS2, CYB, CYNB, CBLB, DCPSB versus DZ
- (B) CN, CLM, CA, CY, CYN, CBL, CL, CD versus ALPHAC
- (C) CN, CLM, CA, CY, CYN, CBL, CL, CD versus DZ
- (D) CN, CLM, CA, CY, CYN, CBL, CL, CD versus DX

- (E) CN, CLM, CA, CY, CYN, CBL, CL, CD versus DY
- (F) CN, CLM, CA, CY, CYN, CBL, CL, CD versus ALPHAO
- (G) CN, CLM, CA, CY, CYN, CBL, CL, CD versus INCID

## NOMENCLATURE General

| SYMBOL              | PICT<br>SYMBOL   | DEFINITION  |
|---------------------|------------------|---|
| а                   |                  | speed of sound; m/sec, ft/sec                                 |
| $c_{\mathrm{p}}$    | CP               | pressure coefficient; $(p_1 - p_{\omega})/q$                  |
| М                   | MACH             | Mech number; V/a  |
| p                   |                  | pressure; N/m <sup>2</sup> , psf                              |
| q                   | Q(NSM)<br>Q(PSF) | dynamic pressure; $1/2\rho V^2$ , $N/m^2$ , psf               |
| RN/L                | rn/l             | unit Reynolds number; per m, per ft                           |
| v                   |                  | velocity; m/sec, ft/sec                                       |
| Ot                  | ALPHA            | angle of attack, degrees                                      |
| β                   | BETA             | angle of sideslip, degrees                                    |
| ψ                   | PSI              | angle of yaw, degrees   |
| $oldsymbol{\phi}$   | PHI              | angle of roll, degrees  |
| ρ                   |                  | mass density; kg/m <sup>3</sup> , slugs/ft <sup>3</sup>       |
|                     | / 1              | Reference & C.G. Definitions                                  |
| Ab.                 | , **             | base area; m <sup>2</sup> , ft <sup>2</sup>                   |
| b                   | BREF             | wing spen or reference spen; m, ft                            |
| c.g.                |                  | center of gravity   |
| ${m \ell_{ m REF}}$ | lr <b>e</b> f    | reference length or wing mean aerodynamic chord; m, ft        |
| S                   | SREF             | wing area or reference area; m <sup>2</sup> , ft <sup>2</sup> |
|                     | MRP              | moment reference point  |
|                     | XMRP             | moment reference point on X sxis                              |
|                     | YMRP             | moment reference point on Y axis                              |
|                     | ZMRP             | moment reference point on Z axis                              |
| SUBSCR<br>b<br>1    | IPTS             | base<br>local   |

# NOMENCLATURE (Continued)

## Body-Axis System

| SYMBOL                                      | PLOT<br>SYMBOL | DEFINITION  |
|---|----------------|---|
| $\mathbf{c}^{\mathbf{M}}$                   | CM             | normal-force coefficient; normal force  |
| cA  | CA             | axial-force coefficient; axial force qS   |
| $\mathbf{c}_{\mathbf{Y}}$                   | CY             | side-force coefficient; side force qS   |
| $^{\mathrm{C}}{}_{\mathrm{A}_{\mathrm{b}}}$ | CAB            | base-force coefficient; base force<br>-A <sub>b</sub> (p <sub>b</sub> - p <sub>ω</sub> )/qC |
| $\mathtt{c}_{\mathtt{A_f}}$                 | CAF            | forebody axial force coefficient, CA - CAb  |
| $c_{\mathrm{m}}$                            | CIM            | pitching-moment coefficient; pitching moment qsl <sub>REF</sub>                             |
| Cn  | CYN            | yawing-moment coefficient; yawing moment qSb  |
| C <b>Į</b>                                  | CBL            | rolling-moment coefficient; rolling moment  |
|   |                | Stability-Axis System   |
| $\mathbf{c}^{\mathtt{r}}$                   | CL             | lift coefficient; lift qS   |
| $\mathbf{c}_{\mathtt{D}}$                   | CD             | drag coefficient; drag  |
| $\mathtt{c}_{\mathtt{D}_{\!b}}$             | CDB            | base-drag coefficient; base drag q5   |
| $c_{D_{\vec{\Gamma}}}$                      | CDF            | forebody drag coefficient; $C_{\mathrm{D}}$ - $C_{\mathrm{D}_{\mathrm{b}}}$                 |
| $\mathbf{c}^{\mathbf{\lambda}}$             | CY             | side-force coefficient; $\frac{\text{side force}}{qS}$                                      |
| C <sub>m</sub>                              | CLM            | pitching-moment coefficient; $\frac{\text{pitching moment}}{\text{qS}I_{\text{REF}}}$       |
| $c_n$                                       | CLN            | yawing-moment coefficient; <u>yawing moment</u> qSb   |
| c.V   | CSL            | rolling-moment coefficient; rolling moment  |
| r/d   | r/d            | lift-to-drag ratio; $c_{\rm L}/c_{\rm D}$   |
| L/D <sub>f</sub>                            | L/DF           | lift to forebody drag ratio; $c_{ m L}/c_{ m Df}$ $OR_{IGINAL}$ $OF_{POOR}$ $OR_{IGINAL}$   |

## NOMENCLATURE (Continued)

| SYMBUL                             | PLOT<br>SYMBOL | DEFINITION  |
|------------------------------------|----------------|---|
| BSTA                               |                | Longitudinal carrier station, in.   |
| BWL.                               |                | Vertical carrier station, in.   |
| ВL                                 |                | Lateral carrier station, in.  |
| δ <sub>a</sub>                     | AILRON         | Orbiter aileron deflection angle, $ \delta_{a} = \frac{\delta_{eL} - \delta_{eR}}{2}, \text{ degrees} $ |
| $\delta_{ m BF}$                   | BDFLAP         | Orbiter body flap surface deflection angle, positive deflection trailing edge down, degrees             |
| δe                                 | ELEVON         | Orbiter elevon surface deflection angle, positive deflection trailing edge down, degrees                |
| $\delta_{\mathtt{r}}$              | RUDDER         | 747 rudder surface deflection angle, positive deflection trailing edge to the left, degrees             |
| $\delta_{	extsf{s}}$               | STAB           | 747 stabilizer surface deflection angle, positive deflection trailing edge down, degrees                |
| Сув                                | CYB            | Side force coefficient due to beta  |
| с <sub>ув</sub><br>с <sub>пв</sub> | CYNB           | Yawing moment coefficient due to beta   |
| С <sub>гв</sub>                    | CBLB           | Rolling moment coefficient due to beta  |
| ΔC <sub>P</sub> s <sub>β</sub>     | DCPSB          | Differential right hand and left hand strut pressure coefficient due to beta                            |
|                                    |                | ORBITER   |
| C <sub>P</sub> B1                  | CPB1           | Orbiter (tail cone off) base pressure coefficient, 1  |
| с <sub>р</sub> в2                  | СРВ2           | Orbiter (tail cone off) base pressure coefficient, 2  |
| с <sub>Рв3</sub>                   | CPB3           | Orbiter (tail cone off) base pressure coefficient, 3  |

## NOMENCLATURE (Concluded)

| SYMBOL                | PLOT<br>SYMBOL | DEFINITION  |
|-----------------------|----------------|---|
| $c_{ m PCO}$          | CPCO           | Orbiter balance cavity pressure coefficient   |
| $c_{P_{S1}}$          | CPS1           | Orbiter strut L. H. side pressure coefficient   |
| $c_{P_{S2}}$          | CPS2           | Orbiter strut R. H. side pressure coefficient   |
| $c_{P_{CC}}$          | CPCC           | 747 cavity pressure coefficient   |
| $c_{\mathtt{PSB1}}$   | CPSB1          | 747 upper forward sting cavity pressure coefficient   |
| $c_{PSB2}$            | CPSB2          | 747 upper center sting cavity pressure coefficient  |
| $c_{P_{SB3}}$         | CPSB3          | 747 upper aft sting cavity exit pressure coefficient  |
|                       |                | SEPARATION PARAMETERS   |
| $\Delta_{\mathbf{X}}$ | DELX           | Orbiter longitudinal displacement from mated position, positive aft, feet   |
| Δy                    | DELY           | Orbiter lateral displacement from mated position, positive right, feet  |
| Δz                    | DELZ           | Orbiter vertical displacement from mated position, positive up, feet  |
| Δφ                    | DPHI<br>DELPHI | Incremental roll angle, Orbiter FRP, degrees  |
| io                    | IORB           | Orbiter incidence angle, orbiter FRL to 747 FRL $(i_0 = \alpha_0 - \alpha_c)$ , degrees   |
|                       | INCID          | Orbiter incidence angle (accounts for tunnel flow angularity variation from tunnel $E$ to tunnel wall) $i_0 = \alpha_0 - \alpha_C - \Delta Z(0059)$ , degrees |
| α <sub>o</sub>        | ALPHAO         | Orbiter angle of attack (tunnel flow angularity from tunnel & to tunnel wall not applied), degrees  |
| αc                    | ALPHAC         | Carrier FRL angle of attack, degrees  |
| Δβ                    | DELBETA        | Incremental sideslip angle, orbiter to 747 FRL, degrees   |

#### REMARKS

The model component surface deflection angles called out in the run summary are nominal values. The actual angles tested are outlined below.

|  | Nominal                     | Actual                               |
|--|-----------------------------|--------------------------------------|
| Orbiter Elevon:  | 0°<br>+5°<br>+10°           | 0°<br>+5.0°<br>+9.8°                 |
| Orbiter Aileron: $(^{\delta}_{e} = 5, ^{\delta}_{a} = -5)$ 747 Stabilizer: | 0°/10°<br>-1°<br>+3°<br>+5° | 0°/+9.8°<br>-0.75°<br>3.27°<br>5.32° |
| 747 Rudder:  | +100                        | +10.70                               |

During the early separation  $\Delta z$  sweep runs, it was noted that for  $\Delta z$  in the 0 to 15 foot range, the coefficient polars had different characteristics for  $\Delta z$  decreasing than for  $\Delta z$  increasing. Subsequent pitch/pause data runs demonstrated that there was a proximity hysterisis effect. All runs thereafter were made with pitch/pause points in close proximity and constant sweep beyond 10 feet.

## CONFIGURATIONS INVESTIGATED

The orbiter model, 48-0, was an 0.0125-scale representation of the Space Shuttle Orbiter VC70-000002 lines, illustrated in figure 2a. The Orbiter model was tested both with and without a tail cone fairing which covered the MPS nozzles and the OMS pod base as shown in figure 2b. Orbiter alone runs were made with a base sting mount, the sting replacing the upper MPS nozzle, figure 2h. The following orbiter configurations were tested:

 $O_2 = B_{6\downarrow_1} C_{1\downarrow_1} F_{1\downarrow_1} E_{1\downarrow_1} M_{18} N_{9\downarrow_1} N_{92} W_{116}$   $O_4 = B_{6\downarrow_1} C_{1\downarrow_1} F_{1\downarrow_1} E_{1\downarrow_1} M_{18} N_{105} N_{92} R_{18} V_{23} W_{116} \text{ (upper MPS nozzle off)}$   $O_6 = B_{6\downarrow_1} C_{1\downarrow_1} F_{1\downarrow_1} E_{1\downarrow_1} M_{18} W_{116} TC_{14}$ 

#### where:

| Component   | Description   |
|---|---|
| B <sub>64</sub>   | Orbiter fuselage per Rockwell lines VC70-000002, Model drawing SS-A01377  |
| c <sub>14</sub>   | Orbiter canopy per Rockwell lines VC70-000002, Model drawing SS-A01377  |
| $\mathbf{E}_{\mathbf{l}_{\mathbf{l}}\mathbf{l}_{\mathbf{l}}}$ | Orbiter full span, unswept hingeline, 6-inch gapped elevons per Rockwell lines VC70-000002, Model drawing SS-A01377 |
| F <sub>14</sub>   | Orbiter body flap per Rockwell lines VC70-000002, Model drawing SS-A01377   |
| <sup>M</sup> 18   | Orbiter OMS/RCS pods per Rockwell lines VC70-000002, Model drawing SS-A01377  |
| <sup>N</sup> 92   | Orbiter OMS engine nozzles per Rockwell lines VC70-000002, Model drawing SS-A01377                                  |
| N94   | Orbiter main engine nozzles per Rockwell lines VC70-00002, Model drawing SS-A01377                                  |
| <sup>N</sup> 105  | Same as N94 with upper nozzle removed   |

# CONFIGURATIONS INVESTIGATED - (Continued)

| Component       | Description   |
|-----------------|---|
| R <sub>18</sub> | Orbiter rudder per Rockwell lines VC70-000002, Model drawing SS-A01377              |
| v <sub>23</sub> | Orbiter vertical tail per Rockwell lines VC70-000002, Model drawing SS-A01377       |
| W116            | Orbiter double delta wing per Rockwell lines VC70-000002, Model drawing SS-A01377   |
| TC <sub>4</sub> | Orbiter tail cone fairing which covers the MPS nozzles and the OMS nozzles and base |

Orbiter elevon, aileron and body flap deflection angles were varied. Configuration  $O_{14}$  was the sting mounted orbiter configuration, and  $O_{2}$  and  $O_{6}$  were blade mounted configurations.

Orbiter-to-carrier attach structure was simulated. These included faired and unfaired strut members as identified below and illustrated in figures 2f and 2g.

$$AT_y = AT_{112} + AT_{113}$$

$$AT_x = AT96 + AT99$$

#### where:

| Component         | Description   |
|-------------------|---|
| AT <sub>112</sub> | Fwd. attach structure, short fairing, io = 40                 |
| AT113             | Aft attach structure, unfaired draglink, other members faired |
| AT <sub>96</sub>  | Fwd attach structure, faired, io = 40                         |
| AT99              | Aft attach structure, faired                                  |

# CONFIGURATIONS INVESTIGATED - (Concluded)

The carrier model, AX1318I-1, was an 0.0125-scale representation of the Boeing 747-100 aircraft with surface contours built to represent the 747 under loads it would experience with a 600,000 pound gross weight flying at Mach 0.86 at an altitude of 5,000 feet. The CAM (Carrier Aircraft Modification) kit tested on the model included 200 square foot tip fins on the horizontal tail panels and simulated orbiter-to-carrier attach structure. In-flight speed brakes were deployed for most runs in the configuration shown in figure 2e. Stabilizer and rudder deflections were varied during the test. The carrier was tested both isolated and in proximity to the orbiter. Configurations investigated were:

 $747/1 = B_{27.8} W_{44.1} V_{9.1} H_{15.6} M_{25} M_{26} N_{57} N_{58} S_{1-12} T_{14} AT( )$  $747/4 = Same as 747/1 except no H_{15.6}$ 

#### where:

| Component          | Description                              |
|--------------------|--|
| B <sub>27</sub> .8 | Fuselage                                 |
| W44.1              | Wing                                     |
| V9.1               | Vertical Tail                            |
| H <sub>15</sub>    | Horizontal tail, basic                   |
| H <sub>15.6</sub>  | Horizontal tail, with 200 ft. 2 tip fins |
| M <sub>25</sub>    | Inboard nacelle struts                   |
| M26                | Outboard nacelle struts                  |
| N57                | Inboard nacelles                         |
| N58                | Outboard nacelles                        |
| S <sub>1-12</sub>  | Spoiler Panels                           |
| Т14                | Flap track fairings                      |

#### INSTRUMENTATION

Force instrumentation consisted of a six-component internal force balance mounted in each model. The orbiter balance measured orbiter forces and the carrier balance measured carrier data.

Pressure instrumentation for the orbiter consisted of 3 base pressure orifices (tailcone off only) and 1 balance cavity orifice. Pressure instrumentation for the carrier consisted of 1 balance cavity orifice and 3 sting/boattail cavity pressure orifices as shown below. Also, see figure 2k. All pressures were measured by individual pressure transducers.

|                    | Pressure        |
|--------------------|-----------------|
| Orbiter pressures: | PCO             |
|                    | PBl             |
|                    | PB <sub>2</sub> |
|                    | PB3             |
| Carrier pressures: | PCC             |
|                    | PSB1            |
|                    | PSB2            |
|                    | PSB3            |
| Strut pressures:   | PS1             |
|                    | PS2             |
| Tailcone pressure: | PTC             |

#### TEST FACILITY DESCRIPTION

The Vought Aeronautics Company High Speed Wind Tunnel is a blowdown-to-atmosphere, transonic-supersonic adjustable Mach number facility.

Six tanks with a total of 28,000 cubic feet air storage capacity receive the reheated air until a maximum storage pressure of 600 psia is reached. The compressor discharge is then vented to atmosphere until the tank pressure is reduced below 400 psia. An alumina pebble bed in each tank absorbs heat during pump up and dissipates heat during air discharge to maintain a near constant supply temperature.

The time required to recharge the air storage tanks following a run varies from 15 to 45 minutes depending upon the final tank pressure. A nominal tank pressure increase rate is 9 psi per minute.

Mach number control at the supersonic test section velocities is accomplished with an adjustable contour nozzle. Two flexible stainless steel plates, 3/4-inch thick, 48 inches wide, and 453 inches long, are contoured to produce a uniform test section flow using 28 nozzle jacks on each plate spaced at 10- to 18-inch intervals. During nozzle changes the plates are hydraulically extended to permit positioning of the threaded nozzle jacks. After the nozzle jacks are properly set, the plates are retracted against the nozzle jack stops. Microswitches on the stops indicate plate contact. Strain indicators at each jack position protect the nozzle plate from excessive stresses.

During each run the hydraulic cylinders are charged with high pressure to hold each plate support rigidly against the nozzle jack stops.

#### TEST FACILITY DESCRIPTION (Concluded)

For transonic operation the supersonic diffuser is removed and the transonic test section and ejector section are set in place. The model cart is relocated downstream approximately 11 feet into the transonic test section. Test section window locations relative to the model cart are the same for either section. Conversion time is nominally 2 hours.

The transonic test section has normal hole perforated walls with 22.5% porosity. Test section size is nominal 4 x 4 feet with each side wall converged 25 minutes. Subsonic Mach number control is accomplished with hydraulic servo-actuated choking flaps downstream of the test section. A control system maintains the preset ratio of static to total pressure during each run by causing small changes in choking area. Above Mach number 0.9, approximately, the choking flaps are fully open and Mach control is switched to a set of plenum chamber bleed control flaps. These hydraulically-actuated, servo-controlled "Mach flaps" remove test section air through the porous walls by ejection pumping of the plenum chamber. A maximum Mach number of 1.15 can be attained with a sonic nozzle. To obtain Mach numbers greater than 1.5, it is necessary to contour the nozzle plates in addition to utilizing plenum pumping. A maximum Mach number of 1.8 is possible in the transonic test section, although the supersonic test section is recommended for Mach numbers of 1.4 and greater.

#### DATA REDUCTION

Force and moment data were reduced in both body and stability axes using standard data reduction procedures. Coefficient data for each vehicle were computed based on their respective reference dimensions. Separation distances  $\Delta x$ ,  $\Delta y$ , and  $\Delta z$  were computed in the carrier body axis system and represent the movement of the orbiter from the base (mated) position.

|                                  | Carri          | <u>er</u>     | Orbit          | er            |                              |
|----------------------------------|----------------|---------------|----------------|---------------|------------------------------|
| Symbol                           | Model<br>Scale | Full<br>Scale | Model<br>Scale | Full<br>Scale | Description                  |
| s                                | 0.859          | 5500          | 0.420          | 2690          | reference area, ft.2         |
| ъ                                | 29.351         | 2348.04       | 11.709         | 936.68        | reference span, in.          |
| <u>c</u>                         | 4.097          | 327.78        | 5.935          | 474.81        | reference MAC, in.           |
| MRC                              |                |               |                |               | moment reference center, in. |
| X <sub>c</sub> or X <sub>o</sub> | 16.749         | 1339.90       | 13.862         | 1109          |                              |
| Ye or Yo                         | 0.0            | 0.0           | 0.0            | 0.0           |                              |
| Z <sub>c</sub> or Z <sub>o</sub> | 2.385          | 190.75        | 4.687          | 375           |                              |

No base or cavity pressure corrections were applied to the data.

Wind tunnel data were interpolated versus angle of attack, angle of sideslip, orbiter incidence angle and separation distances  $\Delta x$ ,  $\Delta y$  and  $\Delta z$ . Both basic and interpolated data are presented in this report.

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Aircraft (Piggyback Configuration)," July 15, 1974

747-MD-654, "Forward Support Structure Instl. -747 CAM"

747-MD-658, "Support Structure Instl. -Aft"

AX 1318I-1, "747 Model Drawings 0.0125-Scale."

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65-89588, "Body Lines AX1318I-1"

TABLE I.

| EST : CA26        | <br>TEST CON                         | DITIONS                 | DATE : Post Test   |
|-------------------|--------------------------------------|-------------------------|--|
|                   |                                      |                         | ,  |
| MACH NUMBER       | REYNOLDS NUMBER<br>(per unit length) | DYNAMIC PRESSURE<br>PSF | STAGNATION TEMPERATU<br>(degrees Fahrenheit)   |
| 0.3               | 2.6 x 10 <sup>6</sup> /ft            | 200                     | 119  |
| 0.5               | 4.0 x 10 <sup>6</sup> /ft            | <b>4</b> 45             | 115  |
| 0.6               | 4.3-4.9 x 10 <sup>6</sup> /ft        | 570 - 625               | 89 - 132   |
| 0.7               | 5.1 x 10 <sup>6</sup> /ft            | 720                     | 96   |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      | 1.0-inch MK XIV         | The second secon |
| BALANCE UTILIZED: | CAPACI                               |                         |  |
|                   | Orbiter                              | Carrier                 | Accuracy   |
| NF                | 800 1.5.                             | 1000 lb.                | 0.2%   |
| SF                | 400 16.                              | 800 1ь.                 | 0.2%   |
| AF                | 100 lb.                              | 200 lb.                 | 0.2%   |
| PM                |                                      | 1000 inlb.              | 0.2%   |
| RM                | 250 inlb.                            | loo_inlb.               | 0.2%   |
| YM                |                                      | 1200 inlb.              | 0.2%   |
| COMMENTS:         |                                      |                         |  |
| ooamen rot        |                                      |                         |  |
|                   |                                      |                         |  |
|                   |                                      |                         |  |

TABLE II

| TEST:  | CAZ6   |               |   | DAT      | A SE   | T/RU            |                 | BER               |              | ATION  | 1 SUMN                                | ARY           |             | DATE:          | Po       | πεσ      | TE.      | ET.         |       |
|--|--|---------------|---|----------|--|-----------------|-----------------|-------------------|--------------|--|---------------------------------------|---------------|-------------|----------------|----------|----------|----------|-------------|-------|
| DATA SET   |  |               |   | RIER     |  | 1               |                 |                   | ORBIT        |  |                                       | <del> </del>  |             |                |          | MACHN    | UMBERS   |             |       |
| IDENTIFIER   | CONFIGURATION  |               | β |          | δr   | $\delta_{ m e}$ | δ <sub>8F</sub> | $\delta_{\alpha}$ | Δx           | ΔY   | Δz                                    | $a_{o}$       | $\beta_{O}$ | φ <sub>O</sub> |          |          | 0.6      |             |       |
| AFEOOI   | 04*  |               |   |          |  | 0               | 0               | 0                 |              |  | <u> </u>                              | 12            | 0           | 0              |          |          | 1        |             |       |
| €2   |  |               |   |          |  | 0               | :6.3            | ٥                 |              |  |                                       | 2             | 0           | 0              |          | ļ        | 2        | ·           |       |
| 03   |  |               |   |          |  | 5               | 0               | 0                 |              |  |                                       | 2             | 0_          | 0              |          |          | 4.1      |             | 7     |
| 04   |  |               |   |          |  | 5               | 0               | 0                 |              |  |                                       | 2             | -5          | 0              |          | ļ        | 4.2      |             | 1     |
| 05   | 0251   |               |   | L        |  | 5               | 0               | 0                 |              |  | <u> </u>                              | (2)           | 0           | 0              |          | ļ        | 7.1      | <del></del> |       |
| 06   |  |               |   |          |  | 5               | 0               | 0                 |              |  | ļ                                     | 2             | -5          | 0              | <u> </u> |          | 7.2      |             | 16.3  |
| 07   |  |               |   |          |  | 5               | 0               | 0                 |              | <u> </u>   |                                       | 8             | 0           | 0              | <b></b>  | <u> </u> | 8        | <del></del> |       |
| 08   |  |               |   |          |  | 0               | 0               | 0                 |              |  | <u></u>                               | 2             | 0           | 0              |          |          | 9        |             |       |
| 09   |  |               |   |          |  | 0               | 16.3            | 0                 |              |  |                                       | 2             | 0           | 0              | ļ        |          | 10       |             |       |
| 10   |  |               |   |          |  | 0               | -11.7           | 0                 |              |  |                                       | 2             | ٥           | 0              |          | ļ        | 11       |             |       |
| 11   |  |               |   |          |  | 0               | S               | 0                 |              |  |                                       | 12            | 0           | 0              |          |          | 12       |             | ]     |
| 12   | 0651   |               |   |          |  | 0               | -11.7           | 0                 |              |  |                                       | 2             | 0           | 0              |          |          | 14       | ,           | _     |
| 13   | <u> </u>   |               |   |          | 1  | 0               | -11.7           | 0                 |              |  |                                       | 2             | -5          | 0              |          |          | 15       | ļ <u>.</u>  |       |
| 14   |  | <u> </u>      |   |          | 1  | 5               | -(1.7           | 0                 |              |  |                                       | 1/2           | 0           | 0              |          |          | 16.1     |             |       |
| 15   |  |               |   |          | <b>†</b>   | 5               | -11.7           |                   |              |  |                                       | /2            | -5          | 0              |          |          | 16.2     |             |       |
| 19   |  | _             | 1 |          |  | <b>T</b>        | 1               |                   |              |  | · · · · · · · · · · · · · · · · · · · |               |             |                |          |          |          |             |       |
|  |  |               |   |          |  |                 | 1               |                   |              |  | <u> </u>                              |               |             |                |          |          |          | L           | 1     |
|  |  |               | + | $\vdash$ | <del>                                     </del> |                 | <b>†</b>        |                   |              | <del>                                     </del> |                                       |               |             |                |          |          |          |             |       |
| and the state of t | and the second state of th |               |   |          |  | 31              |                 | 3.7               | <del> </del> | 43   | 4                                     | - <del></del> | 55          |                | 61       |          | F. 7     |             | 75    |
| لنبليا   |  | <u>•</u><br>• |   | 25       | 16°  |                 | OEFF1           |                   | I L I I      | <u> </u>   | <u> </u>                              |               | 1   4       |                | ببنا     | (AR(1)   | IDVA     | R (2)       | iVE   |
| <b>a</b> or<br>schedu  | 72 7   | = 0           |   | 0        | 72   | 400             | 4-              |                   |              |  |                                       |               |             |                |          |          | A 2 A JA | MSFC-M      | 3.A.F |

SEE PAGE 46 FOR COEFFICIENT SCHEDULE

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1.42 665

| TEST: C    |  | _  | OUR TOTAL CO.          | RIER | NO.   |  | -    |                       | ORBIT                                  | TO AND THE PERSON NAMED IN COLUMN 1 | SUMN | TACH ARREST OF THE PARTY. |                | OLDS VIOLENDAM | T   | MACH NUMBE | RS   |               |
|------------|--|--|------------------------|------|-------|--|------|-----------------------|--|-------------------------------------|------|---------------------------|----------------|----------------|-----|------------|--|---------------|
| DATA SET   | CONFIGURATION  | а  | NAME OF TAXABLE PARTY. | On.  | δr    | $\delta_{ m e}$  | ÓBF  | CONTRACTOR CONTRACTOR | Δx                                     | ΔΥ                                  | Δz   | $a_0$                     | β <sub>O</sub> | φ0             |     | 0.         | Section of the last of the las | 1             |
| FEOIL      | 747/1 ATY  | 0  | 0                      | 5    | 0     |  |      |                       |  |                                     |      | -                         | -              | -              | -   | 1          |  | nace produces |
| 17         |  | 2  | 0                      | 5    | 0     | L.   |      |                       |  |                                     |      |                           |                | -              | -   | 25         |  | -             |
| 18         |  | 4  | 0                      | 5    | 0     |  |      | _                     |  |                                     |      |                           |                | -              | -   | 20         |  | - Section     |
| 19         |  | 5.5  | 0                      | 5    | 0     |  |      | <u> </u>              |  |                                     |      | _                         | -              | 4-             | -   | 20         |  | -             |
| 20         |  | 0  | 0                      | -1   | 0     |  |      |                       |  |                                     |      |                           |                | -              | -   | 18         |  | -             |
| 21         | and the second of the second o | 2  | 0                      | -1   | 0     |  |      | _                     |  |                                     | -    | _                         |                | -              | -   | 2          |  | - 5           |
| 22         |  | 4  | 0                      | -1   | 0     |  |      | _                     |  |                                     |      | _                         | -              | -              | -   | 2.         |  | -             |
| 23         |  | 2  | -5                     | 5    | 0     |  |      | _                     |  |                                     | 1_   | -                         | +              | +-             |     | 2          |  |               |
| 24         |  | 2  | 0                      | 5    | 0     |  |      | _                     | -                                      | ļ                                   | 1    | <del> </del>              |                | +              | -   | 25         |  |               |
| ZS         |  | 2  | 0                      | 5    | 0     | and the same of th |      | _                     | A                                      |                                     |      | _                         | -              | +-             | -   | 25         |  |               |
| 26         | 747/1  | 0  | 0                      | -1   | 0     |  |      | _                     |  |                                     |      | -                         | -              | -              | -   | 10         |  | -             |
| 27         | •  | 0  | 0                      | 3    | 0     |  |      |                       |  |                                     | -    | -                         |                | -              | -   | 2          |  | -             |
| 28         |  | 0  | 0                      | 5    | 0     |  |      |                       |  |                                     |      | -                         | -              |                | +-  | 2          |  | 1             |
|            | 747/4  |  | 0                      | _    | 0     | No.  | _    | _                     |  | -                                   |      | -                         |                | +-             | -   | 2          | 2  | -             |
|            | ·  |  |                        |      |       |  |      | _                     |  |                                     |      | -                         | +              | +-             | +   |            | -  | 1             |
|            |  | and the same of th | L                      | _    | _     | _  | _    | 4                     |  | -                                   | -    | +-                        | +              | -              | +-  | -          | +  | 1             |
|            |  |  | -                      | _    | _     | 1  |      | _                     |  | -                                   | -    | +-                        | +-             | +              | -   | -          | _  | 1             |
|            |  |  | 1                      |      | 0.000 | 1  |      |                       | 1                                      |                                     |      |                           |                |                |     |            |  | 75            |
| 1          | 7 13 1   | 9  |                        | 25   |       | 31   |      | 37                    | AND DESCRIPTION OF THE PERSON NAMED IN | 43                                  |      | 19                        | 55             |                | 61  | 67         |  | Ť             |
|            | ليسيليسيا  |  |                        | سا   |       | 4  | COFF | FICT                  | ENTS                                   | 44                                  |      |                           |                |                | ID\ | VAR(1) 1   | DVAR(2)  | Ν             |
| <b>α</b> 0 | · A Z:   | = 0  | to                     | 5    | 3 5   | eet  | COEI |                       | ENTS                                   |                                     |      |                           |                |                |     |            |  | -             |

| TEST: (    | 2AZ6           | J        | i digir     | DA I       | A SE     | I /RU           | אטא א             | IBER                 | ' CUL'. | AHUr  | 4 SUMM  | ART        | ·        |               |          |                         | TEN  |  |             |
|------------|----------------|----------|-------------|------------|----------|-----------------|-------------------|----------------------|---------|---|---------|------------|----------|---------------|----------|-------------------------|--|--|-------------|
| DATA SET   |                |          | CAR         | RIER       |          |                 |                   | 21 - 11<br>21 - 12   | ORBIT   |   |         |            | -        | ر مستحد بروم  |          |                         | UMBERS                                       | The same of the last of the la |             |
| IDENTIFIER | CONFIGURATION  | a        | β           | $\delta_A$ | δΓ       | $\delta_{ m e}$ | δgr               | $\delta_{\alpha}$    | Δx      | ΔY  | ΔZ      | 10         | βο       | φo            | 0.3      | D.5                     | 0.6  | 0.7  |             |
| R/AFE030   | 747/1 ATY 0251 | 0        | 0           | 5          | 0        | 5               | -117              | 0                    | 0       | 0   | 3       | 4          | 0        | 0             |          |                         | 30.1   |  | 1           |
| 31         |                |          |             |            |          |                 |                   |                      |         |   | 3/2     | 6          |          |               |          |                         | 30.2   | 1  |             |
| 3Z         |                |          |             |            |          |                 |                   |                      |         |   | 3       | 6          |          |               |          | 12 12                   | 30.3   |  |             |
| 33         |                |          |             |            |          |                 |                   |                      |         |   | /3/3    | 6          |          |               |          |                         | 34.2   | <b></b>  |             |
| <i>3</i> 4 |                |          | ,<br>,<br>, |            |          |                 |                   | - 14<br>- 14<br>- 14 |         |   | 3       | 8          |          |               |          |                         | 31   |  |             |
| 35         |                | 0        | 0           | 5          | 0        | 5               | -11.7             | ٥                    | ٥       | 0   | /3!     | 4          | 5        | 0             |          |                         | 33.1   | ļ  | , r         |
| 36         |                |          |             |            |          |                 | 5 - 5,1<br>1,44,5 |                      |         |   | 3       | 6          |          |               |          |                         | 33 2   |  | ز           |
| 37         |                |          |             |            |          |                 |                   |                      |         |   | (3)     | 8          |          |               |          |                         | 34.1   | <u> </u>   | 2           |
| <i>3</i> 8 |                | 0        | 0           | -1         | 0        | 5               | -11.7             | ٥                    | 0       | 0   | /3\     | 4          | 0        | 0             |          |                         | 3C.1   |  |             |
| 39         |                |          |             |            |          |                 |                   |                      |         |   | /3.     | 6          |          |               |          |                         | 35.2   |  | 2 7         |
| 40         |                |          |             |            |          |                 |                   |                      |         |   | /3\     | 8          |          | vi.,(0).      |          |                         | 36   |  | ]           |
| 41         |                | 2        | 0           | -1         | 0        | 5               | -11.7             | 0                    | 0       | 0   | /3.4    | 4          | 0        | 0             |          |                         | 311.1  |  |             |
| 42         |                |          |             |            |          |                 |                   |                      |         |   | /33     | 6          |          | <u> </u>      | <u> </u> |                         | 37.2   |  |             |
| 43         | NO LATA AVAILE |          | 7.5         |            |          | 1               |                   |                      |         |   | /3⁴     | В          |          |               |          |                         | 38.1   |  | e and and a |
| 44         | NO DATA AVILLE | 100      | 1 .         |            |          | 1               |                   | ····                 |         |   | 3\3     | 8          |          |               |          |                         | 38.2   | •  |             |
| 45         |                | 2        |             | 5          | 0        | 5               | -11.7             | 0                    | 0       | 0   | 3       | 4.         | 0        | 0             |          |                         | 39.1   | <u> </u>   |             |
|            |                |          | Ĭ           |            |          |                 |                   |                      |         | . In the state of | /3\     | ے          |          |               | 44       | 43                      | 39.2   | . 42   |             |
| 46<br>47   |                |          | 1           |            |          |                 |                   |                      |         |   | /3\     | 8          |          |               |          |                         | 40.1   |  | L           |
| 47         |                | <b>_</b> |             |            | <u> </u> | 31              | deren estado      | 37                   |         | 43  | <u></u> | ,          | 55       |               | £1       |                         | - <u>-                                  </u> |  | 7 :         |
| 10.00      | 7 13 19        |          |             | 25         |          |                 |                   | 444                  |         |   | الناب   |            | Se Olive | 1111          |          | 1.1.                    | بينا   |  |             |
| α OR       | B & AZ W       |          |             |            |          | NO.             | OEFF              | CE                   | NTS     |   | 33      | <u>Δ</u> Ζ | INCY     | <u>e.1-1:</u> | نبث      | /AR(I),<br>مربان<br>سر∯ | <u>pa.</u>                                   | AR(2)  | ND<br>-     |

A DZ werening

| DATA SET   |                 |             | CAR        | RIER    |    | The state of the s |               | (             | ORBITI     | R  |             |  |      |  | M/     | ACH NUMBERS |      |    |
|--|-----------------|-------------|------------|---------|----|--|---------------|---------------|------------|----|-------------|--|------|--|--------|-------------|------|----|
| DENTIFIER  | CONFIGURATION   |             |            |         | Ĵγ | $\delta_{e}$   | $\delta_{BF}$ | $\delta_{a}$  | ΔX         | ΔY | ΔZ          | lo   | βο   | $\phi_{O}$   |        | 0.6         |      | 1  |
| R/AFE048   | 747/1ATY \$251  | 2           | $\bigcirc$ | <u></u> |    | 5  | 0             | 0             | ۵          | 0  | 3           | 4  | 5    | 0  |        | 41.1        |      | 1  |
| 49   |                 |             |            |         |    |  |               |               |            |    | 3           | 6  |      |  |        | 41.2        |      |    |
| 50   |                 |             |            |         |    |  |               |               |            |    | /3          | 8  |      |  |        | -10.2       |      | _  |
| 51   | 747/1 AT : 0251 | Z           | ٥          | 5       | 0  | 5  | 0             | 0             | 0          | 0  | 3           | 4_   | 0    | 0  |        | 45.1        |      | 4  |
| 52   |                 |             |            |         |    |  |               |               | 4.1<br>4.1 |    | 3           | 6  |      |  |        | 45.2        |      | _  |
| 53   | 747/1 ATY 0251  | 2           | 0          | IJ      | 0  | 5  | ٥             | ٥             | 0          | 4  | 0           | 6  | 0    | C  |        | 46.1        |      |    |
| 54   |                 |             |            |         |    |  |               |               |            |    | 15          |  |      |  |        | 46.2        |      |    |
| 55   |                 |             |            |         |    |  |               |               |            |    | 0           |  |      |  |        | 46.3        |      |    |
| 56   |                 | 2           | 0          | w       | 0  | 5  | 0             | 0             | ٥          | 4  | 0           | 6  | 5    | 0  |        | 47.1        |      |    |
| 57   |                 |             |            |         |    |  |               |               |            |    | 15          |  |      |  |        | 47.2        |      |    |
| <i>5</i> 8   |                 |             |            |         |    |  |               |               |            |    | 60          |  |      |  |        | 47.3        |      |    |
|  |                 | Z           | 0          | 5       | 0  | 5  | 0             | 0             | סו         | 4  | 0           | 6  | 0    | 0  |        | 48.1        |      |    |
| 60   |                 |             |            |         |    |  |               |               |            |    | ıs          |  |      |  |        | 48.2        |      |    |
| 61   |                 | 1           |            |         |    |  |               |               |            |    | 60          |  |      |  |        | 48 3        |      |    |
| 62   |                 | Z.          | 0          | 5       | 0  | 5  | 0             | $\overline{}$ | /5         | 0  | ٥           | 6  | 0    | 0  |        | 49.1        |      |    |
| 63   |                 | <del></del> | Ť          |         |    | 1  | -             |               |            |    | 15          |  |      |  |        | 49.2        |      | _  |
| 65<br>64   |                 |             |            |         |    | 1  |               |               |            |    | 60          |  |      |  |        | 49.3        |      |    |
| <u>~~</u>  |                 |             | Ī          |         | -  | •  |               |               |            |    |             |  |      |  |        |             |      |    |
|  |                 |             |            | حــــا  | 4  | 31   |               | 37            | L          | 43 | 49          | <del>)                                    </del> | 55   | ni 140 mar 140 | 61     | 67          |      | 75 |
| La de la companya de | 7 13 19         |             |            | 25<br>1 |    |  |               |               |            |    |             | 1 1 1 1  | 11.1 |  |        | ببدان       |      |    |
| <u></u>  | B A AY=-        |             | <u> </u>   |         |    | C  | DEFFI         |               |            |    | <u>\\$\</u> | \ \ \  | بىر  |  | 20 fec | (1) IDVA    | R(2) | Ν  |

| EST:            | CAZ6           | _ ل |         | DAT                | A SET        | r/Ru           | וטא א       | MBER       | COLL         | ATIO        | 1 SUMM      | IARY | L   |          | , ,        |        | TEST             |     |
|-----------------|----------------|-----|---------|--------------------|--------------|----------------|-------------|------------|--------------|-------------|-------------|------|-----|----------|------------|--------|------------------|-----|
| DATA SET        | CONFIGURATION  |     |         | RIER               |              |                | :_          |            | ORBIT        |             |             |      |     |          |            | MACHN  | البرن نيرا كشاسا |     |
| DENTIFIER       |                | а   | β       | δ <sub>&amp;</sub> | δr           | δ <sub>e</sub> | ÖBF         | <b>ð</b> a | Δx           | ΔY          | ΔŻ          | io   | βο  | φο       |            |        | 0.6              |     |
| VAFE065         | 747/1 ATY 0251 | 2   | 0       | 5                  | 0            | 5              | 0           | 0          | <u>\(5\)</u> | 0           | 0           | 6.   | 3   | 0        |            |        | SC.I             |     |
| 66              |                |     |         |                    |              |                |             |            |              |             | 15          |      |     |          |            |        | 50.2             |     |
| 67              |                |     |         |                    |              |                |             |            |              |             | 60          |      |     |          |            |        | 50.3             |     |
| 68              |                | 2   | 0       | 5                  | 0            | 0              | 16.3        | 0          | 0            | 0           | [3]         | 4    | 0   | 0        |            |        | 51.1             |     |
| G               |                |     |         |                    |              |                |             |            |              |             |             | 6    |     |          |            |        | 512              |     |
| 70              |                |     |         |                    |              |                |             |            |              |             |             | 8    |     |          |            |        | 52               |     |
| 71              |                | 2   | 0       | ١ <i>ŋ</i>         | 0            | 0              | 5           | 0          | 0            | 0           | 3           | 4    | 0   | 0        | Ĺ <u> </u> |        | 53.i             |     |
| 72              |                |     |         |                    |              |                |             |            |              |             |             | 6    |     |          |            |        | SE.2             |     |
| 73              |                |     |         |                    |              |                |             |            |              |             |             | 8    |     |          |            |        | 54               |     |
| 74              |                | 12  | 0       | IJ                 | ۵            | 0              | 0           | 0          | 0            | 0           | 3           | 4    | 0   | 0        |            |        | 55.1             |     |
| 75              |                |     |         |                    |              |                |             |            |              |             |             | 6    |     |          |            |        | 55,2             |     |
| 76              |                | 1   |         |                    |              |                |             |            |              |             |             | 8    |     |          |            |        | 56               |     |
| 77              |                | Z   | 0       | 5                  | 0            | 10             | 0           | 0          | 0            | 0           | 3           | 6    | 0   | 0        |            |        | 57               |     |
| 78              |                | Z   |         | 5                  | 0            | 5              | 0           | -5         | 0            | 0           | /3          | 6    | 0   | 0        |            |        | 58               |     |
| 79              |                | Īz  | 1       | 5                  | 10           |                | 0           | ٥          | 0            | 0           | /3          | 6    | O   | 0        |            |        |                  |     |
| 80              |                | Z   | _       | 5                  | 0            | 5              | 0           | 0          | 0            | 0           | 3           | 4    | -5  | 0        |            |        | 60.1             |     |
|                 |                |     |         |                    | <del>-</del> | Ť              |             |            |              |             |             | 6    |     | 1        |            |        | 60.2             |     |
| <u>81</u><br>82 |                |     |         |                    |              |                |             |            | <b> </b>     |             |             | 8    |     | 1        |            |        | 61               |     |
| 06              |                |     |         |                    |              |                |             |            | <del></del>  |             | 49          |      | 55  | Ann mirm | 6-1        |        | 1.7              | 7   |
|                 | 7              |     | <u></u> | 25                 |              | 31             | <del></del> | 37.        |              | 43          | 4.          |      | . 1 |          | 1          |        |                  | . T |
|                 |                | ••• |         |                    | 111          | a Li           | OEFFI       | ICIEN      | IIS          | <del></del> | <del></del> |      |     |          | IDV        | /AR(1) | IDVAR(2)         | ) 1 |





| TEST:      | CAZG           | ]   |     | DAT  | 4 SET      | r/Rui            | N NUI      | <b>ABER</b>      | COLL  | _ATIO    | 1 SUMM | ARY          |          | DAIL   |          | Tac  | 16.5 | - 1      |            |
|------------|----------------|-----|-----|------|------------|------------------|------------|------------------|-------|----------|--------|--------------|----------|--------|----------|--|------|----------|------------|
| DATA SET   |                |     | CAR | RIER |            |                  |            | <del></del>      | ORBIT | ER       | -      |              |          |        |          | MACHN  |      |          | _          |
| IDENTIFIER | CONFIGURATION  | α   | β   |      | $\delta_r$ | ð <sub>e</sub>   | <b>OBF</b> | δo               | Δx    | ΔY       | ∆z     | io           | βο       | φο     |          |  | 0.6  |          |            |
| VAFE083    | 747/1 ATY 0251 | 2   | -\$ | 5    | Ü          | 5                | q          | 0                | S     | 0        | 0      | 6            | O        | 0      |          | <del>                                     </del> | 62.1 |          |            |
| 84         |                |     |     |      |            |                  |            |                  |       | <u> </u> | 15     |              |          |        | <u></u>  | <del> </del>                                     | 62.2 |          |            |
| 85         |                |     |     |      |            |                  |            |                  |       |          | 60     |              |          |        |          | <del> </del>                                     | 62.3 |          | 1          |
| 86         |                | 2   | 45  | 5    | 0          | 5                | 0          | 0                | 0     |          | 0      | 6            | 0        | 0      |          | <del> </del>                                     | 65.1 |          | l          |
| 87         |                |     |     |      |            | <u> </u>         |            |                  |       |          | 15     |              | <u> </u> |        |          |  | 63.2 |          | ł          |
| 88         |                |     |     |      |            |                  |            |                  |       |          | 60     |              |          |        |          | <u> </u>   | 63.3 | <u> </u> | j          |
| 89         |                | 4   | 0   | 5    | 0          | 5                | ٥          | 0                | O     | 0        |        | 4            | 0        | 0      | ļ        |  | 64.1 |          | 1          |
| 90         |                |     |     |      |            |                  |            |                  |       |          |        | 6            |          |        | <u> </u> | <u> </u>   | 64.2 |          | 1          |
| 91         |                |     |     |      |            |                  |            |                  |       |          |        | 8            |          |        | <u> </u> |  | 65   | ļ        |            |
| 92         |                | 4   | 0   | 5    | 0          | 5                | D          | 0                | 0     | 0        | 3      | 4            | 5        | 0      |          | 1  | 66.1 |          |            |
| 93         |                |     |     |      |            |                  |            |                  |       |          |        | 6            |          |        |          |  | 66.2 |          | 4.         |
| 94         |                | 1   |     |      |            |                  |            |                  |       |          |        | 8            |          |        |          |  | 67   |          | 1          |
| 95         |                | 14  | 0   | -1   | 10         | 5                | 0          | 0                | 0     | 6        | 3      | 4            | 0        | 0      | <u> </u> | <u> </u>   | 68.1 |          | 1          |
|            |                |     | Ť   |      | 1          |                  |            |                  |       |          |        | 6            |          |        |          |  | 68.Z |          | 1          |
| 96         |                | 1   | 十   |      | 1          |                  |            |                  |       |          |        | 8            |          |        |          |  | 69   |          | 1          |
| 97         |                | 4   | 0   | S    | to         | 10               | 0          | 0                | 0     | O        | 3      | 4            | 0        | 0      |          |  | 70.1 |          |            |
| 98         |                | 十   | ۲   |      | 1          | 1 <sup>~</sup>   |            |                  |       |          | 2      | 6            |          |        |          |  | 70.2 |          |            |
| 99         |                |     | +-  |      |            |                  | -          |                  | 1     |          |        | 8            |          |        |          |  | 71   |          | 1          |
| 00         |                | يال |     |      |            |                  |            | <u> </u>         |       | -        | 4:     | and the same | 55       |        | £1       |  | € "  |          | 7 <u>.</u> |
|            | 7 13 19        |     | 1.1 | 25   |            | 31<br>- L L<br>C | OEFF       | 37<br>LL<br>CIEN | ITS   | 43       |        | 111          |          | بالماد | l.       | VAR(1)   | IDVA | R(2)     | N          |

|             |                | r ( | AR | RIER |     |                 |       |      | ORBITI | Ē Ř  |     |          |                |          |     | MACHI  | NUMBERS |         |    |
|-------------|----------------|-----|----|------|-----|-----------------|-------|------|--------|------|-----|----------|----------------|----------|-----|--|---------|---------|----|
| DATA SET    | CHEIGURATION   |     |    | δe.  | δr  | $\delta_{ m e}$ | OSF   |      | Δx     | ΔY   | ∆z  | Ĺo       | β <sub>O</sub> | $\phi_0$ | 42  |  | 0.6     |         | Ţ  |
| AFE IOI     | 747/1 ATY 0251 | 4   | -5 | 5    | 0   | 5               | 0     | 0    | 0      | 0    | 3   | 4        | -5             | Ο        |     |  | 72.1    |         | -  |
| IOZ         |                |     |    |      |     |                 |       |      |        |      |     | 6        |                |          |     |  | 72.2    | 1       | 1  |
| 103         | •              |     |    |      |     |                 |       |      |        |      |     | පි       |                |          |     | <u> </u>                                     | 73      |         | 1  |
| 104         |                | 5.5 | 0  | 5    | 0   | w               | 0     | ٥    | 0      | 0    | [3] | 6        | ٥              | 0        |     | ļ  | 74      |         | 4  |
| 105         |                | ٥   | -5 | 5    | 0   | ธ               | 0     | 0    | 0      | 0    | 3   | 4        | -5             | 0        |     | <u>                                     </u> | 75.1    |         | 4  |
| 106         |                |     |    |      |     |                 |       |      |        |      |     | ط        |                |          |     |  | 75.2    |         | -  |
| 107         |                |     |    |      |     |                 |       |      |        |      |     | 8        |                |          |     |  | 76      |         | 4  |
|             | 747/1 ATY 0651 | z   | 0  | 5    | 0   | S               | -11.7 | 0    | 0      | 0    | 3   | 6        | 0              | 0        |     |  | 77      |         | 1  |
| 109         |                |     | 0  |      | 0   | ٥               | -11.7 | 0    | 0      | 0    | 3   | 4        | 0              | 0        |     |  | 18.1    |         | 1  |
| 110         |                |     |    |      |     |                 |       |      |        |      |     | 6        |                |          |     | <b>_</b>                                     | 78.2    |         | 1  |
| 111         |                |     |    |      |     |                 |       |      |        |      |     | 8        |                |          |     |  | 79      |         | 1  |
| 112         |                | Z   | 0  | ไม   | 0   | 0               | -11.7 | O    | 5      | 0    | 0   | 6        | 0              | 0        |     | <u> </u>                                     | 81.1    | <b></b> | 1  |
| 113         |                |     |    |      |     |                 |       |      |        |      | 15  | <u> </u> |                |          |     |  | 81.2    | ļ       | 1  |
| 114         |                |     |    |      |     |                 |       |      |        |      | 60  |          |                |          |     | <b></b>                                      | 81.3    |         | 1  |
| IIS         |                | Z   | 0  | 5    | 0   | 0               | -11.7 | 0    | 0      | 4    | 0   | 6        | 0              | 0        |     | ļ  | 82.1    |         | 1  |
| 116         |                |     |    |      |     |                 |       |      |        |      | 15  |          |                | <u> </u> |     |  | 82.2    |         | 4  |
| 117         |                |     |    |      |     |                 |       |      |        |      | 60  |          | <u> </u>       |          |     | <u> </u>                                     | 82.3    |         | 4  |
|             |                |     |    |      |     |                 |       |      |        |      |     |          |                |          |     | <u> </u>                                     |         |         | l  |
|             | 7 13 19        |     |    | 25   |     | 31              |       | 37   |        | 43   | 49  | )        | 55             |          | 61  |  | €7      |         | 75 |
|             |                |     |    | ببا  | 111 | سلل             |       | عل   |        | سيا  | للب | سب       |                |          | ببا | <u> </u>                                     | 444     | B (2)   | Ļ  |
| <b>a</b> OF |                | . : |    |      |     | C               | OEFF. | ICIE | NTS    | * ** |     |          |                |          | ID\ | VAR(1)                                       | IDVA    | K(Z)    | N  |





747/1 ATY 0651 0 O RAFEIIB 5 0 0 10 119

CONFIGURATION

TEST: CAZ6

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SCHEDULES

DATA SET

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1-11.710 005 0 0 124 125 126

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COEFFICIENTS

TABLE II (Continued)

DATA SET/RUN NUMBER COLLATION SUMMARY

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-117

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\* Vertical strut blade / orbiter gap sealed

NASA-MSFC-MAF

IDVAR(2) NDV

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MACH NUMBERS

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86.2

87

88.1

88.2

69

90

91

92

93

94.1

94.2

94.3

67

IDVAR(1)

13\*

D C Z

TABLE II (Continued)

| CHARACTER                         | DATA SET |       | T VARIABLE SECOND | DEPENDENT VARIABLES                               |
|-----------------------------------|----------|-------|-------------------|---|
| IDENTIFIER                        | NUMBER   | FIRST | SECOND            | DBC EADERT VIALIDADO                              |
| AW                                | 1-6      | MACH  | ALPHAO            | BETAO, CN, CLM, CA, CY, CYN, CBL, CL, CD          |
| AW                                | 7        | MACH  | DZ                | DY, DX, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AW                                | 8-13     | MACH  | ALPHAO            | BETAO, CN, CLM, CA, CY, CYN, CBL, CL, CD          |
| AW                                | 14-15    | MACH  | INCID             | CN, CLM, CA, CY, CYN, CBL, CL, CD                 |
| AWRY                              | 30-52    | MACH  | DZ                | DY, DX, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 53-61    | MACH  | DΥ                | DX, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 62-67    | MACH  | DX                | DY, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 68-82    | MACH  | DZ                | DY, DX, CN, CLM, CA, CY, CIN, CBL, CL, CD         |
| AWRY                              | 83-85    | MACH  | DX                | DY, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 86-88    | MACH  | DY                | DX, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 89-111   | MACH  | DZ                | DY, DX, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 112-114  | MACH  | DX                | DY, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 115-117  | MACH  | DY                | DX, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AWRY                              | 118-130  | MACH  | DZ                | DY, DX, CN, CLM, CA, CY, CYN, CBL, CL, CD         |
| AW                                | 131-133  | MACH  | INCID             | CN, CLM, CA, CY, CYN, CBL, CL, CD                 |
| AW                                | 134      | MACH  | ALPHAO            | BETAO, CN, CLM, CA, CY, CYN, CBL, CL, CD          |
|                                   |          | 1     |                   |   |
| BX                                | 1-4      | MACH  | ALPHAO            | CPCO, CPB1, CPB2, CPB3                            |
| BX                                | 5-6      | MACH  | ALPHAO            | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2                |
| BX                                | 7        | MACH  | DZ                | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO |
| ВХ                                | 8-11     | MACH  | ALPHAO            | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2                |
| ВХ                                | 12-13    | MACH  | ALPHAO            | CPCO, CPS1, CPS2                                  |
| вх                                | 14-15    | MACH  | INCID             | CPCO, CPS1, CPS2                                  |
| BX                                | 30-52    | MACH  | DZ                | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO |
| ् <del>याहर</del><br>अस्तर्भावकार |          |       |                   | INCID, ALPHAC                                     |
| вх                                | 53-61    | MACH  | DY                | CPCO, CPB1 CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO  |
|                                   |          |       |                   | INCID, ALPHAC                                     |
| BX                                | 62-67    | MACH  | DX                | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO |
|                                   |          |       |                   | INCID, ALPHAC                                     |

TABLE II (Continued)

| DATA SET 1st<br>CHARACTER<br>IDENTIFIER | DATA SET<br>NUMBER                           | INDEPENDEN<br>FIRST                          | T VARIABLE<br>SECOND               | DEPENDENT VARIABLES   |
|---|--|--|------------------------------------|---|
| BX                                      | 68-82  | масн   | DZ                                 | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO, INCID, ALPHAC  |
| вх                                      | 83-85  | MACH   | DX                                 | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAU,  |
| вх                                      | 86-88  | MACH   | DY                                 | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAU,  |
| ВХ                                      | 89-111                                       | MACH   | DZ                                 | CPCO, CPB1, CPB2, CPB3, CPS1, CPS2, ALPHAO, BETAO, INCID, ALPHAC  |
| ВХ                                      | 112-114                                      | MACH   | DX                                 | CPCO, CPS1, CPS2, ALPHAO, BETAO, INCID, ALPHAC  |
| BX                                      | 115-117                                      | MACH   | DX                                 | CPCO, CPS1, CPS2, ALPHAO, BETAO, INCID, ALPHAC  |
| ВХ                                      | 118-130                                      | масн   | DZ                                 | CPCO, CPS1, CPS2, ALPHAO, BETAO, INCID, ALPHAC  |
| BX<br>BX                                | 131-133<br>134                               | MACH<br>MACH                                 | INCID<br>ALPHAO                    | CPCO, CPS1, CPS2<br>CPCO, CPB1, CPB2, CPB3, CPS1, CPS2  |
| RY<br>RY<br>RY<br>RY                    | 16-23<br>24<br>25<br>26-29                   | MACH<br>MACH<br>MACH<br>MACH                 | ALPHAC<br>DZ<br>DX<br>ALPHAC       | BETAC, CN, CLM, CA, CY, CYN, CBL, CL, CD<br>DY, DX. CN, CLM, CA, CY, CYN, CBL, CL, CD<br>DY, DZ, CN, CLM, CA, CY, CYN, CBL, CL, CD<br>BETAC, CN, CLM, CA, CY, CYN, CBL, CL, CD  |
| SZ<br>SZ<br>SZ<br>SZ<br>SZ<br>SZ        | 16-23<br>24<br>25<br>26-29<br>30-52<br>53-61 | Mach<br>Mach<br>Mach<br>Mach<br>Mach<br>Mach | ALPHAC<br>DZ<br>DX<br>ALPHAC<br>DZ | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF) CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC CPCC, CPSB1, CPSB2, CPSB3, Q(PSF) CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID |
| SZ                                      | 62-67  | MACH   | DX                                 | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID  |

TABLE II (Concluded)

| DATA SET 1st<br>CHARACTER<br>IDENTIFIER | DATA SET<br>NUMBER | INDEPENDENT VARIABLE<br>FIRST SECOND | DEPENDENT VARIABLES   |
|---|--------------------|--------------------------------------|---|
| SZ                                      | 68-82              | MACH DZ                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID                            |
| SZ                                      | 83-85              | MACH DX                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC,   |
| SZ                                      | 86-88              | масн ду                              | ALPHAO, BETAO, INCID<br>CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC,<br>ALPHAO, BETAO, INCID |
| SZ                                      | 89-111             | MACH DZ                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID                            |
| SZ                                      | 112-114            | MACH DX                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID                            |
| SZ                                      | 115-117            | MACH DY                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID                            |
| SZ                                      | 118-130            | MACH DZ                              | CPCC, CPSB1, CPSB2, CPSB3, Q(PSF), ALPHAC, BETAC, ALPHAO, BETAO, INCID                            |

# TABLE III (MODEL DIMENSIONAL DATA)

## a. Orbiter Model

| MODEL COMPONENT : BODY - CHL - BAL         |                 |                                       |
|--|-----------------|---------------------------------------|
| GENERAL DESCRIPTION : The body is an       | elongated struc | ture containing                       |
| the Crew Module and Cargo Bay. Same as     | IML plus l" TPS | S.                                    |
|  |                 |                                       |
| MODEL SCALE: 0.0125                        |                 |                                       |
| DRAWING NUMBER: VC70-000002, SS-A0         | 1377            | · · · · · · · · · · · · · · · · · · · |
|  |                 |                                       |
| DIMENSIONS :                               | FULL SCALE      | MODEL SCALE                           |
| Length $(X_0 = 235 \text{ to 1519})$ , In. | 1284.0          | 16.050                                |
| Max Width $(X_0 = 1516.8)$ , In.           | 262.718         | 3.284                                 |
| Max Depth (Xo = 1463.316), In.             | 248.575         | 3.107                                 |
| Fineness Ratio                             | 5.1365          | 5.1365                                |
| Area - Ft <sup>2</sup>                     |                 |                                       |
| Max. Cross-Sectional                       | 340.82          | 0.053                                 |
| Planform                                   |                 | <u> </u>                              |

Wetted

| MODEL COMPONENT :           | CANOPY (OUTER MOLD   | ) LINE) - C <sub>LL</sub> |                  |
|-----------------------------|--|---------------------------|------------------|
| GENERAL DESCRIPTION         | : The canony is th   | nat part of the           | forward fuselage |
| which covers the Crew       | Module. One inch   | · TPS thickness           | on the canopy.   |
| Configuration 140C.         |  |                           |                  |
| MODEL SCALE: 0.0125         |  |                           |                  |
| DRAWING NUMBER:             | VC70-000002, SS-A01  | 1377                      |                  |
|                             | ·  |                           |                  |
|                             |  |                           |                  |
| DIMENSIONS:                 |  | FULL SCALE                | MODEL SCALE      |
| Length (X <sub>0</sub> =435 | 5.196 - 670.0), In.  | 234.80                    | 2.935            |
| Max Width (X <sub>O</sub>   | = 594.0), In.  | 195.58                    | 2.445            |
| Max Depth                   |  |                           |                  |
| Fineness Ratio              |  |                           |                  |
| Area                        |  |                           | <del></del>      |
| Max. Cr                     | oss-Sectional  |                           |                  |
| Planform                    | 1  |                           |                  |
| Wetted                      |  |                           |                  |
| Base                        |  |                           |                  |
| .5710 X <sub>0</sub> 564    | 2 Y <sub>0</sub> 6656 Z <sub>0</sub> -<br>1 Y <sub>0</sub> 5965 Z <sub>0</sub> +3<br>4 Y <sub>0</sub> 5965 Z <sub>0</sub> +1 | 2.7354 = 0                | -                |

| MODEL COMPONENT : ELEVON - E,,                               | · · · · · · · · · · · · · · · · · · · |                            |
|--|---------------------------------------|----------------------------|
| GENERAL DESCRIPTION 6.0 In. F.S. gap                         | s machined in                         | to E <sub>26</sub> elevon. |
| Flipper doors, centerbody pieces, and tip                    | seals are not                         | simulated. (Dat            |
| are for one side.)   |                                       |                            |
| MODEL SCALE: 0.0125  |                                       |                            |
| DRAWING NUMBER Not available.                                |                                       |                            |
|  |                                       |                            |
| •  |                                       |                            |
| DIMENSIONS:  | FULL SCALE                            | MODEL SCALE                |
| Area - Ft <sup>2</sup>                                       | 210.00                                | 0.033                      |
| Span (equivalent), In.,                                      | 349.2                                 | 4.365                      |
| Inb'd equivalent chord, In.                                  | 118.0                                 | 1.475                      |
| Outh'd equivalent chord, In.                                 | 55.19                                 | 0.690                      |
| Ratio movable surface chord/ total surface chord             |                                       |                            |
| At Inb'd equiv. chord  | 0.2096                                | 0.2096                     |
| At Outb'd equiv. chord                                       | 0.4004                                | 0.4004                     |
| Sweep Back Angles, degrees                                   |                                       |                            |
| Leading Edge   | 0.00                                  | 0.00                       |
| Trailing Edge  | - 10.056                              | - 10.056                   |
| Hingeline  | 0.00                                  | 0.00                       |
| (Product of area & c) Area Moment (Narradorockingecking), Ft | 1587.25                               | 0.003                      |
| Mean Aerodynamic Chord. In.                                  | 90.7                                  | 1.134                      |

| MODEL COMPONENT: RODY FLAP - F14   |                                       | •<br>   |
|--|---------------------------------------|---|
| GENERAL DESCRIPTION: The body flap is a second                               | ondary movable a                      | airfoil   |
| located at the aft end of the body.  |                                       |   |
|  | · · · · · · · · · · · · · · · · · · · |   |
| MODEL SCALE: 0.0125  |                                       |   |
|  |                                       |   |
| DRAWING NUMBER: VC70-000002  |                                       |   |
| DIMENSIONS:  | FULL-SCALE                            | MODEL SCALE   |
| Area - Ft <sup>2</sup>   | 135.75                                | 0.021   |
| Span (equivalent), In.   | 241.33                                | 3.017   |
| Inb'd equivalent chord, In.  | 81.0                                  | 1.013   |
| Outb'd equivalent chord, In.   | 81.0                                  | 1.013   |
| Ratio movable surface chord/<br>total surface chord                          |                                       |   |
| At Inb'd equiv. chord  | 0.0                                   | 0.0   |
| At Outb'd equiv. chord   | 0.0                                   | 0.0   |
| Sweep Back Angles, degrees   |                                       | i de la compania de<br>La compania de la co |
| Leading Edge   | 0.0                                   | _0.0  |
| Tailing Edge   | _0.0                                  |   |
| Hingeline<br>(Product of Area & c)<br>Area Moment (Normalxtoxbingsxdine), Ft | 3 <u>916.31</u>                       | 0.0018  |
| Mean Aerodynamic Chord, In.  | 81.0                                  | 1.013   |

| MODEL COMPONENT : OMS PODS (OML)          | - M <sub>18</sub>  |                     |
|---|--|---------------------|
| GENERAL DESCRIPTION : _ The CMS pods ar   | e nacelles hous  | ing the maneuvering |
| engines and are located on the fuselage   | on either side   | of the vertical     |
| tail. Same as IML plus 1/2" TPS.          | e de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición de la composición dela com |                     |
| MODEL SCALE: 0.0125                       |  |                     |
| DRAWING NUMBER:                           | ¥3001  |                     |
|   |  |                     |
|   |  |                     |
| DIMENSIONS:                               | FULL SCALE   | MODEL SCALE         |
| Length (X <sub>O</sub> =1311 - 1511), In. | 200.00   | 2.500               |
| Max Width $(X_0 = 304)$ , In.             | 135.75   | 1.697               |
| Max Depth $(X_0 = 304)$ , In.             | 74.5   | 0.931               |
| Fineness Ratio                            |  | -                   |
| Area - Ft <sup>2</sup>                    |  |                     |
| Max. Cross-Sectional                      | 58.169   | 0.009               |
| Planform                                  |  | <del></del>         |
| Wetted                                    |  |                     |
| Rose                                      |  |                     |

| MODEL COMPONENT:                         |                           |                | <u> </u> |                         |                          | •       |
|--|---------------------------|----------------|----------|-------------------------|--------------------------|---------|
| GENERAL DESCRIPTIO                       |                           | two orbiter m  |          | ·                       | ·                        |         |
| shaped and are lo                        | cated at the              | e aft end of t | the OMS  | pods. These             | dimensions a             | re<br>— |
| external and are                         | not to be u               | sed for plume  | tests.   | •                       |                          |         |
| MODEL SCALE:                             | 0.0125                    |                |          |                         |                          |         |
| DRAWING NUMBER:                          | MC6210000                 | 9, VC70-00000  | 2, VL70- | 008401, Aero            | jet 1181900              | *       |
| dimensions:                              |                           |                |          | FULL SCALE              | MODEL SCALE              |         |
| MACH NO.                                 |                           |                |          |                         |                          |         |
|  | int to Exit<br>Exit Plane | Plane          |          | 56.00<br>56.00          | 0.700                    |         |
| Diameter - In<br>Exit<br>Throat<br>Inlet | •                         |                |          | 45.09                   | 0.564                    |         |
| Area - ft <sup>2</sup><br>Exit<br>Throat |                           |                |          | 11.09                   | 0.139                    |         |
| Gimbal Point                             | (Station) -               | In.            | :        |                         | a Silver<br>Karana       |         |
| X<br>Y<br>Z                              |                           |                |          | 1518.0<br>88.0<br>192.0 | 18.975<br>1.100<br>6.150 |         |
|  |                           |                |          |                         |                          |         |
| Null Position<br>Pitch<br>Yaw            |                           |                |          | 15.82°<br>6.5°          | 15.82°<br>6.5°           |         |
|  |                           |                |          |                         |                          |         |

| MODEL COMPONENT: MPS NOZZLES - N94  |                  |                 |
|---|------------------|-----------------|
| GENERAL DESCRIPTION: The main propulsion noz                                    | zles are Lava    | al-bell shaped  |
| and are located on the aft planes of the orbiter                                | . These dime     | ensions are ex- |
| ternal and are not to be scaled for plume tests.                                | •                |                 |
| MODEL SCALE: 0.0125   |                  |                 |
| DRAWING NUMBER: VC70-000002, VL70-008144; RS00                                  | 9169, RS00910    | 07, 13M15000    |
| DIMENSIONS:   | FULL SCALE       | MODEL SCALE     |
| MACH NO.  |                  |                 |
| Length - In. Gimbal Point to Exit Plane   | 157.00           | 1.963           |
| Throat to Exit Plane  |                  |                 |
| Diameter - In. Exit   | 97.914           | 1.224           |
| Throat<br>Inlet   | <del></del>      |                 |
| Area - ft <sup>2</sup><br>Exit<br>Throat  | 52.290           | 0,008           |
| Gimbal Point (Station) - In. Upper Nozzle                                       |                  |                 |
| <b>x</b> <sub>0</sub>   | 1445.0           | 18.063          |
| $\mathbf{z_0}^{\mathbf{y_0}}$   | 443.0            | 5.538           |
| Lower Nozzles   | 1468.170         | 16 2 <b>5</b> 9 |
| $egin{array}{c} \mathbf{x}_{0} \\ \mathbf{y}_{0} \\ \mathbf{z}_{0} \end{array}$ | 53.00<br>342.640 | 0.663<br>4.283  |
| Null Position - Deg.  |                  |                 |
| Upper Nozzle<br>Pitch   | 16.0             | 16.0            |
|   |                  |                 |
| Lower Nozzle<br>Pitch<br>Yaw  | 10.0<br>3.5      | 10.0<br>3.5     |
| 소리를 받는 그런 한 것으로 해야 한다. 이 보기가 되었습니다. 그리고 그런 보고 그렇게 되었습니다.<br>건강 사이지 하는 것이 되었습니다. |                  |                 |

| a. Orbit<br>MODEL COMPONENT: MP3 NOZZLES - N <sub>105</sub>        | er Model                     | •                                |
|--|------------------------------|----------------------------------|
| GENERAL DESCRIPTION: Same as N <sub>94</sub> except t              | he unper nozzle is           | removed.                         |
|  |                              |                                  |
|  |                              |                                  |
| MODEL SCALE: 0.01.25   |                              |                                  |
| DRAUING NUMBER: <u>VC70-000002</u> , VL70-008144;                  | RS009169, RS00910            | 07, 13ML5000                     |
| DIMENSIONS:  | FULL SCALE                   | MODEL SCALE                      |
| Mach no.   |                              | r <sub>e</sub> <del>-</del> rent |
| Length - In.<br>Gimbal Point to Exit Plane<br>Throat to Exit Plane | 157.00                       | _1.963                           |
| Diameter - In.<br>Exit<br>Throat<br>Inlet                          | 97.914                       | 1.224                            |
| Area - ft <sup>2</sup><br>Exit<br>Throat                           | 52.290                       | 0.008                            |
| Gimbal Point (Station) - In. Upper Nozzle  X Y Z                   |                              |                                  |
| Lower Nozzles  XO YO ZO Z  | 1468.170<br>53.00<br>342.640 | 18.352<br>0.663<br>4.283         |
| Null Position - Deg.<br>Upper Nozzle<br>Pitch<br>Yaw               |                              |                                  |
| Lower Nozzle<br>Pitch<br>Yaw                                       | 10.0<br>3.5                  | 10.0<br>3.5                      |

| MODEL COMPONENT RUDDER - R18  |                  |                     |
|---|------------------|---------------------|
| GENERAL DESCRIPTION The rudder is   | a secondary move | ble airfoil at the  |
| trailing edge of the vertical fin that                                    | imparts yaw for  | ces. This dimension |
| data was calculated from the OML master                                   | dimensions 7-19  | 9-74.               |
| MODEL SCALE: 0.0125   |                  |                     |
| DRAWING NUMBER  |                  |                     |
|   |                  |                     |
|   |                  |                     |
| DIMENSIONS  | FULL SCALE       | MODEL SCALE         |
| $Area = Ft^2$   | 97.148           | 0.015               |
| Span (equivalent) , In.   | 198,614          | 2.483               |
| Inb'd equivalent chord, In.   | 90.07            | 1.126               |
| Outb'd equivalent chord, In.  | 50.80            | 0.635               |
| Ratio movable surface chord/<br>total surface chord                       |                  |                     |
| At Inb'd equiv. chord   | 0.400            | 0.400               |
| At Outb'd equiv. chord  | 0.400            | 0.400               |
| Sweep Back Angles, degrees  | <del></del>      |                     |
| Leading Edge  | 34.833           | 34.833              |
| Trailing Edge   | 26.249           | 26.249              |
| Hingeline   | 34.833           | 34.833              |
| (MAC X AREA, Ft <sup>3</sup> ) Area Moment (Mac X AREA, Ft <sup>3</sup> ) | 584.99           | 0.0011              |
| Moon Aprodynamic Chard In   | 72, 260          | 0.903               |

| MODEL COMPONENT : ORBITER TAILCONE   | - TC <sub>4</sub> |   |
|--------------------------------------|-------------------|---|
| GENERAL DESCRIPTION: Fairing mounted | on orbiter fo     | uselage base for                                  |
| ferry missions configuration.        |                   |   |
|                                      |                   |   |
| MODEL SCALE: 0.0125                  |                   |   |
| DRAWING NUMBER: SS-A01452            |                   |   |
|                                      |                   |   |
|                                      |                   |   |
| DIMENSIONS:                          | FULL SCALE        | MODEL SCALE                                       |
| Length                               | 435.76            | 5.447   |
| Max Width                            | 300.80            | 3.76  |
| Mox Baph Height                      | 266.40            | 3.33  |
| Fineness Ratio                       |                   |   |
| Area – Ft <sup>2</sup>               |                   |   |
| Max. Cross—Sectional                 | 462.37            | 0.0722  |
| Planform                             | 635.803           | 0.0993  |
| Wetted                               |                   | • • • <del>• • • • • • • • • • • • • • • • </del> |
| Base                                 |                   |   |

| GENERAL DESCRIPTION: The vertical tail is doubted dorsally on the aft fuselage. These data corresponds to the second dorsally of the second document | espond to sonfi  | guration 140  |
|--|--|---|
|  |  |   |
| 0.0125   |  |   |
| CONTRACTOR 0.0125  |  |   |
| MODEL SCALE: 0.0125  |  |   |
| DRAWING NUMBER: VC70-000002, master dimension  | ns.  |   |
| DRAWING MORIDIN.   | FULL SCALE   | MCDEL SCAL  |
| DIMENSIONS:  | POIN DOADS   |   |
|  |  |   |
| TOTAL DATA   | under<br>House and some his following in the figure  | n de la companya de<br>La companya de la co |
| Area (Theo) - Ft <sup>2</sup>  |  |   |
| and the company of th | <u>_1,13.253</u>   | 0.065<br>3.967  |
| Span (Theo) - In.  | 315.72<br>1.675  | 1.675   |
| Aspect Ratio   | 0.507_   | 0.507   |
| Rate of Taper  | 0.404  | 0.404   |
| Waper Ratio  |  |   |
| Sweep-Back Angles, Degrees.  | 45.000   | 45.000  |
| Leading Edge   | 26.25  | 26.25   |
| Trailing Edge 0.25 Element Line  | 41,13  | 41.13   |
| U.2) Elemento Dino   |  |   |
| Chords:  | 268.50   | 3.356   |
| Root (Theo) WP   | 108.47   | 1.356   |
| Tip (Theo) WP  | 199,81   | 2.498   |
| MAC  | 1463.50  | 18.294  |
| Fus. Sta. of .25 MAC   | 635.52   | 7.944   |
| W.P. of .25 MAC<br>B.L. of .25 MAC   | 0.0  | 0.0   |
|  |  |   |
| Airfoil Section  |  | 30.00   |
| Teading Wedge Angle - Deg.   | 10.00  | 10.00   |
| Trailing Wedge Angle - Deg.  | _14.92   | 14.92<br>0.0250   |
| Leading Edge Radius  |  |   |
|  | 13.17  | 0.0002  |
| Void Area  |  |   |
|  | the state of the s | 0.0   |

# TABLE III (Cont'd) a. Orbiter Fodel

| YODEL COMPONENT: WING-W <sub>176</sub>           | reiter Hodel      |                          |
|--|-------------------|--------------------------|
| PENERA_ DESCRIPTION:                             |                   |                          |
| MOTF: Identical to W, except airfoil thickness   | ess. Dihedral an  | gle is along             |
| trailing edge of wing. Geometric twist           | <b>= 0</b> .      |                          |
| MODEL SCALE: 0.0125                              |                   |                          |
| TST NO.  | DWG. NO. VITO     | <u>-0001404 -0002</u> 0  |
| ORIGINAL PAGE IS OF POOR QUALITY                 | FULL-SCALE        | MODEL SCALE              |
| FOTAL DATA Area (.neo.) Ft <sup>2</sup>          |                   |                          |
| 91an form  | 2690.00<br>936.68 | <u>0.420</u><br>11.709   |
| Span (Theo In.<br>Aspect Ratio                   | 2.265             | 2.265                    |
| Rate of Taper                                    | 1.177             | 1.177                    |
| Taper Ratio                                      | 0.200             | 0,200                    |
| Dinedral Angle, degrees Incidence Angle, degrees | 3.500<br>0.500    | 3,500<br>0,500           |
| Aerodynamic Twist, degrees                       |                   |                          |
| Sweep Back Angles, degrees                       |                   |                          |
| Leading Edge                                     | 45.00<br>= 10.056 | <u>45.00</u><br>- 10.056 |
| Trailing Edge<br>0.25 Element Line               | 35. 20 <u>9</u>   | 35,209                   |
| Chords:  |                   |                          |
| Root (Theo) B.P.O.O.                             | <u>689.24.</u>    | <u>8.616</u>             |
| Tip, (Theo) B.P.                                 | 137.85<br>474.81  | 1.723<br>5.935           |
| MAC<br>Fus. Sta. of .25 MAC                      | 1136.83           | 14.210                   |
| W.P. of .25 MAC                                  | 290.58            | 3.632                    |
| B.L. of .25 MAC                                  | 182.13            | 2.277                    |
| EXPOSED DATA Area (Theo) Ft <sup>2</sup>         | 1751.50           | 0.274                    |
| Area (Theo) Ft                                   | 720.68            | 9.009                    |
| Span, (Theo) In. BP108 Aspect Ratio              | 2,059             | 2:.059                   |
| Taper Ratio                                      | 0.245             | 0.245                    |
| Chords   | 7/0.00            | 7.026                    |
| Root BP108                                       | 562.09<br>137.25  | 1.723                    |
| Tip 1.00 <u>b</u>                                | 392.83            | 4.910                    |
| MAC  | 1185.98           | 14.825                   |
| Fus. Sta. of .25 MAC<br>W.P. of .25 MAC          | 294,30            | 3.679                    |
| B.L. of .25 MAC                                  | 251.77            | 3.147                    |
| Airfoil Section (Rockwell Mod NASA)              |                   |                          |
| XXXX=64 Root b =                                 | 0.113             | 0.113                    |
|  | 0.206             | 0.120                    |
|  | 0.120             | 0.120                    |
| Data for (1) of (2) Sides                        |                   |                          |
| Leading Edge Cuff                                |                   |                          |
| Leading Edge Cuff 2<br>Planform Area Ft2         |                   | 0.677                    |
| Loading Edge Intersects Fus M. L. 0 Sta          | 300.0<br>1024.0   | 6,250<br>12 800          |
| Leading Edge Intersects Wing @ Sta               | 1054.0            |                          |

# TABLE III (MODEL DIMENSIONAL DATA) a. Orbiter Model (Concluded)

| MODEL COMPONENT : Mounting Strut - 31  |  |
|--|--|
| GENERAL DESCRIPTION: Blade strut attachment to orbiter fuselage where vertical tail is normally mounted. Strut | aft upper<br>leading edge  |
| and lower trailing edge conform to the vertical tail pla   | • •  |
| section is blunted diamond. The tip of the strut mounts  | the state of the s |
| MODEL SCALE: 0.0125 DRAWING NUMBER: Rockwell W-11335H  |  |
|  |  |
| DIMENSIONS :   | MODEL SCALE  |
| Theoretical intersection of L.E. with fuselage ML, in.   |  |
| X <sub>0</sub>   | 15.973   |
| $\mathbf{Z_o}$   | 6.250  |
| Leading edge sweep angle, deg.   | 45.0   |
| Trailing edge sweep angle, deg.  | 45.0   |
| chord length, in.  | 2.38   |
|  |  |

maximum thickness, in.

distance from L.E. to maximum thickness, in.

position of sting  $\xi$ , in.  $Z_0$ 

0.52

1.42

12.835

# TABLE III (MODEL DIMENSIONAL DATA)

#### b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT96

GENERAL DESCRIPTION: Forward attach structure between the Orbiter and

Carrier, faired struts, io = 4°

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg. 747-MD-654, SS-A01559-4, -18, -35

| DIMENSIONS:   | FULL SCALE | MODEL SCALE |
|---|------------|-------------|
| i <sub>O</sub> , Incidence angle, deg. (Orbiter FRL to 747 FRL) | 4.0        | 4.0         |
| Fairing chord, right and left, In.                              | 31.0       | 0.388       |
| Fairing T/C   | 0.226      | 0.226       |
| Carrier attach points, In. BSTA                                 | 689.4      | 8.617       |
| BWL.  | 372.0      | 4.650       |
| BL  | 66.3       | 0.829       |
| Orbiter attach points, In. Xo                                   | 388.15     | 4.852       |
| z <sub>o</sub>  | 283.11     | 3.539       |
| Yø .  | 0.0        | 0.0         |
| BSTA  | 681.52     | 8.519       |
| BWL   | 480.4      | 6.005       |

#### b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT99

GENERAL DESCRIPTION: Aft attach structure between orbitor and carrier, same as AT<sub>95</sub> with a single fairing covering the main strut and drag strut on each side, and a fairing on the sway brace.

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwg 747-MD-658, W-1135A-11, -12, SS-A01559-33, -34, -35

| DIMENS | IONS:                      | •                         | FULL SCALE | MODEL SCALE    |
|--------|----------------------------|---------------------------|------------|----------------|
|        | Orbiter attach points, In. | $\mathbf{x}_{\mathbf{o}}$ | 1317.0     | 16.462         |
|        |                            | Yo                        | ± 96.51    | <u>+</u> 1.206 |
|        |                            | Zo, BL                    | 267.5      | 3.344          |
|        |                            | BSTA                      | 1607.0     | 20.087         |
|        |                            | BWL                       | 400.0      | 5.000          |
|        | Main fairing:              |                           |            |                |
|        | Root chord, In.            |                           | 250.0      | 3.125          |
|        | T/c of root chord          |                           | 0.09       | 0.09           |
|        | Tip chord, In.             |                           | 120.0      | 1.500          |
|        | T/c of tip chord           |                           | 0.14       | 0.14           |
| . *    | Sway brace:                |                           |            |                |
|        | Chord, In.                 |                           | 31.0       | 0.388          |
|        | T/c                        |                           | 0.226      | 0.226          |

#### b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT112

GENERAL DESCRIPTION: Forward attach structure between the Orbiter and Carrier with truncated strut fairings. The Orbiter/strut attach point is covered with a "bathtub" fairing, and the 747/strut attach points are also faired over. Struts are set in the  $i_0 = 4^\circ$  position.

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwgs. 747-MD-680 (Modified), AX 1319-224

| DIMENSIONS:  |   | FULL SCALE                                | MODEL SCALE                             |
|--|---|---|---|
| i <sub>o</sub> , Incidence angle, deg.<br>(Orbiter FRL to 747 FRL) | )   | 4.0                                       | 4,0                                     |
| Strut Fairing Chord, In. t/c Length, (Each side), In.              |   | 18.667<br>0.480<br>112.0                  | 0.233<br>0.480<br>1.400                 |
| Orbiter/Strut "Bathtub" Fair<br>Chord, In.<br>t/c                  | ring  | 87 <b>.20</b><br>0.275                    | 1.09<br>0.275                           |
| Carrier Attach Points, In.   | BSTA<br>BVL<br>BL   | 680.0<br>372.0<br>±66.3                   | 8.500<br>4.650<br>±0.829                |
| Orbiter Attach Point, In.  | X <sub>C</sub><br>Z <sub>O</sub><br>Y <sub>O</sub><br>BSTA<br>BWL | 386.15<br>233.11<br>0.0<br>680.0<br>480.4 | 4.852<br>3.539<br>0.0<br>8.500<br>6.005 |

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### b. Carrier Model

MODEL COMPONENT: ATTACH STRUCTURE - AT113

GENERAL DESCRIPTION: Aft attach structure between Orbiter and Carrier, all components except the drag struts are faired. Consists of two faired vertical members, two sway braces, and two drag struts. There are fairing blisters at each end of the sway braces and on the forward end of the drag struts.

MODEL SCALE: 0.0125

DRAWING NO.: Boeing Dwgs. 747-MD-683, AX 1319-213

| DIMENSIONS:  |   | FULL SCALE                                   | MODEL SCALE                                  |
|--|---|--|--|
| Orbiter Attach Points, In.   | X <sub>o</sub><br>Y <sub>o</sub><br>Z <sub>o</sub><br>BSTA<br>BWL | 1317.0<br>±96.51<br>267.5<br>1607.0<br>400.0 | 16.462<br>11.206<br>3.344<br>20.087<br>5.000 |
| 747 Attach Points, In.   | BSTA<br>BWL<br>BL   | 1607.0<br>320.0<br>±96.51                    | 20.087<br>4.000<br>±1.206                    |
| Main Strut Fairings Root chord (BWL 320- 358.8), In. c/c, Root chord Tip chord, Theoretical (BWL 398), In. t/c, Tip chord, Theoretical |   | 80.0<br>0.183<br>137.0<br>0.250              | 0.183<br>1.713<br>0.250                      |
| Sway Brace Fairings Chord, In. t/e Length (Fach side), In.   |   | 40.28<br>0.180<br>56.0                       | 0.504<br>0.180<br>0.700                      |
| Drag Struts<br>Fwd attach points   | BSTA, in.<br>BWL, in.<br>BL, in.                                  | 1443<br>320<br><b>1</b> 96.51                | 18.038<br>4.000<br>±1.206                    |
| Diameter, In.  |   | 12.0   | 0.150  |

| MODEL COMPONENT : BODY - B27.8                     | rier Model        |  |  |
|--|-------------------|--|--|
| GENERAL DESCRIPTION: Body 74-7 Project with A.P.V. |                   |  |  |
|  |                   |  |  |
| MODEL SCALE: 0.0125                                | MODEL DWG: 1318I- | <u>)                                    </u> |  |
| DRAWING NUMBER: 65013609, 1318-5                   | 54.               | <del>- artista kina akampana terika a</del>  |  |
|  |                   |  |  |
| DIMENSIONS:  | FULL SCALE        | MODEL SCALE                                  |  |
| Length , In.                                       | 2702.0            | 33.78  |  |
| Max Width , In.                                    | 255.3             | 3.19   |  |
| Max Depth  |                   | <del></del>                                  |  |
| Fineness Ratio                                     | 9.73              | 9.73   |  |
| Area - Ft <sup>2</sup>                             | •                 |  |  |
| Max. Cross-Sectional                               |                   | <del></del>                                  |  |
| Planform   | <u> </u>          |  |  |
| Wetted   | 14.093            | 2.20   |  |
| Base   |                   |  |  |

# b. Carrier Model

MODEL COMPONENT: HORIZONTAL TAIL - H15.6

GENERAL DESCRIPTION: Horizontal tail, H<sub>15</sub>, with vertical fins on each

tio at body B.L. 427.3

MODEL DWG: 13181-1 MODEL SCALE: 0.0125

65013609. 1318-5. 1318-70

| DRAWING NO.: | 65013609, 1318-5, 1318-70 | FULL_SCALE        | MODEL SCALE   |
|--------------|---------------------------|-------------------|---------------|
| DIMENSIONS:  |                           | TOTAL DESCRIPTION | <del></del> - |
| tři          | Exposed Data (one side):  | •                 |               |
| Fin          |                           | 200.0             | 0.0312        |
|              | $Area = Ft^2$             | 252.0             | 3.15          |
|              | Span, In.                 | ·                 |               |
|              | Chord, In.                | 113.6             | 1.42          |

Carrier Model

2.0

MODEL COMPONENT: M25

GENERAL DESCRIPTION: Inboard 747, JT9D nacelle strut

MODEL DWG: 13181-1 MODEL SCALE: 0.0125

DRAWING NO.: 65013609, 1318-60

Cant angle deg., inboard

FULL SCALE MODEL SCALE DIMENSIONS: 5.875 Wing B.L. of nacelle  $C_{\mathbf{L}}$ , In. 470.0 2.0

b. Carrier Model

MODEL COMPONENT: M26

GENERAL DESCRIPTION: Outboard 747, JT9D

Strut

MODEL SCALE: 0.0125

MODEL DWG: 13181-1

DRAWING NO.: 65013609, 1318-60

DIMENSIONS:

FULL SCALE MODEL SCALE

W L of CL, In.

834.0

10.425

Cant angle, deg. inboard

2.0

2.0

#### b. Carrier Model

MODEL COMPONENT: N57

GENERAL DESCRIPTION: Inboard fan cowl and primary 747 nacelle, flow-

through type.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

# b. Carrier Modek

MODEL COMPONENT: N58

MODEL DESCRIPTION: Outboard fan cowl and primary 747 nacelle, flow-

through type.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

#### b. Carrier Model

MODEL COMPONENT: SPOILERS - S1-12

GENERAL DESCRIPTION: Multi-panel flight spoilers. Four outboard and two inboard spoilers per side. Subscript denotes spoiler panel  $S_1$  is the most outboard L.H. panel and  $S_{12}$  is most outboard R.H. panel.

MODEL SCALE: 0.0125

MODEL DWG: 1318I-1

| DIMENSIONS: (ONE PANEL)                               | FULL SCALE | MODEL SCALE |
|---|------------|-------------|
| Outboard $S_{1-4}$ and $S_{9-1.2}$ (Ft <sup>2</sup> ) | 21.48      | 0.0034      |
| Span (equivalent), In.                                | 75.00      | 0.94        |
| Chord, In.  | 41.28      | 0.52        |
| Inboard, $S_{5-6}$ and $S_{7-8}$ (Ft <sup>2</sup> )   | 35.31      | 0.0055      |
| Span (equivalent), In.                                | 90.00      | 1.130       |
| Chord, In.  | 56.52      | 0.71        |

# b. Carrier Model

MODEL COMPONENT: T14

1

GENERAL DESCRIPTION: Flap track fairings, four on each side

MODEL SCALE: 0.0125

| DIMENSIONS:              | FULL SCALE | MODEL SCALE |
|--------------------------|------------|-------------|
| WBL of Track No. 1, In.  | 235.3      | 2.94        |
| 2, In.                   | 353.0      | 4.41        |
| 3, In.                   | 585.0      | 7.31        |
| 4, In.                   | 743.6      | 9.30        |
| Distance from wing       |            |             |
| Trailing edge to:        |            |             |
| Track trailing edge, In. | 44.0       | 0.55        |

#### b. Carrier Model

MODEL COMPONENT: VERTICAL - V9.1

GENERAL DESCRIPTION: Swept vertical tail

MODEL SCALE: 0.0125 MODEL DWG: 1318I-1

| •                            |            |             |
|------------------------------|------------|-------------|
| DIMENSIONS:                  | FULL SCALE | MODEL SCALE |
| TOTAL DATA                   |            |             |
| Area (Theo), Ft <sup>2</sup> | 630.0      | 0.098       |
| Span (Theo), In.             | 386.5      | 4.830       |
| Sweepback angles, deg., L.E. | 50.12      | 50.12       |
| Aspect ratio                 | 1.25       | 1.25        |
| Chord:                       |            |             |
| Root (Theo), WP, In.         | 461.67     | 5.77        |
| Tip (Theo), WP, In.          | 157.0      | 1.96        |
| Mean Aerodynamic Chord, In.  | 334.16     | 0.43        |
| Fus. Sta. of 0.25 MAC        | 2529.6     | 31.62       |
| W.P. of 0.25 MAC             | 528.0      | 6.60        |

# TABLE III (Concluded)

# b. Carrier Model

MODEL COMPONENT: WING - W44.1

GENTRAL DESCRIPTION: Sweet 747 wing

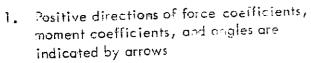
MODEL DWG: 13181-1 MODEL SCALE: 0.0125

| DIMENSIONS:                   | FULL SCALE | MODEL SCALE |
|-------------------------------|------------|-------------|
| Total Data:                   | •          |             |
| Area (Theo.), Ft <sup>2</sup> |            |             |
| Planform                      | 5500.00    | 0.860       |
| Span (Theo.), In.             | 2348.0     | 29.35       |
| Aspect ratio                  | 6.96       | 6.96        |
| Incidence angle, deg.         | 7.0        | 7.0         |
| Chords, In.:                  |            |             |
| MAC                           | 327.8      | 4.10        |
| Fus. sta. of 0.25 MAC         | 1339.87    | 16.75       |
| W.P. of 0.25 MAC              | 190.42     | 2.38        |

#### TABLE IV.

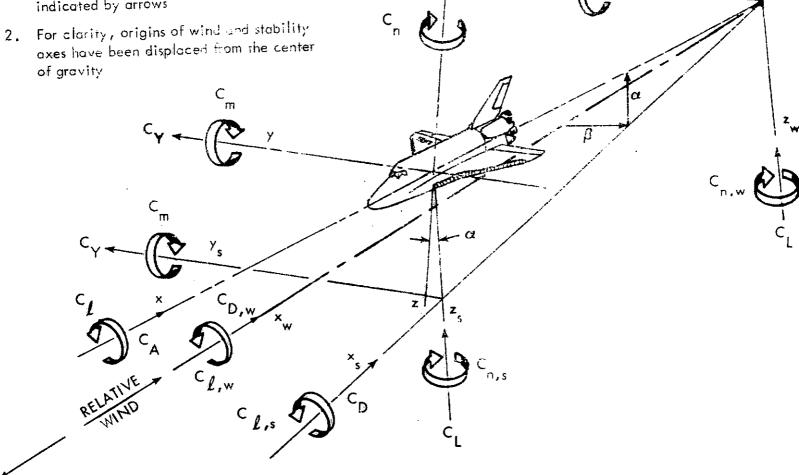
#### CA-26 DATASET DESCRIPTION

| Dataset          | Type               | Description   |
|------------------|--------------------|---|
| RFEXXX<br>SFEXXX | Y FEXXX<br>Z FEXXX | Carrier main balance data. Due to the large amount of data, alternate points were placed in corresponding datasets, e.g., R + S = total. Y and Z contain additional variables supplementary to R and S, respectively. |
| AFEXXX<br>BFEXXX | WFEXXX<br>XFEXXX   | Orbiter balance data. Data were separated similar to the carrier data where W and X contain the supplementary variables.  |



axes have been displaced from the center of gravity

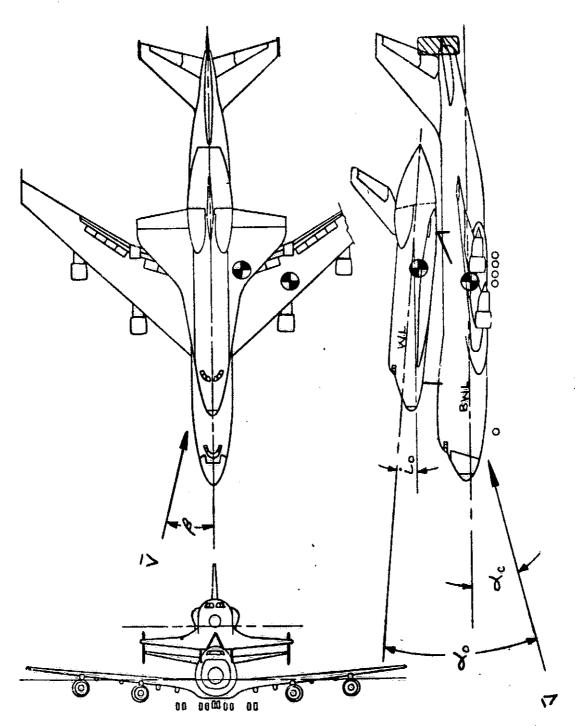
77



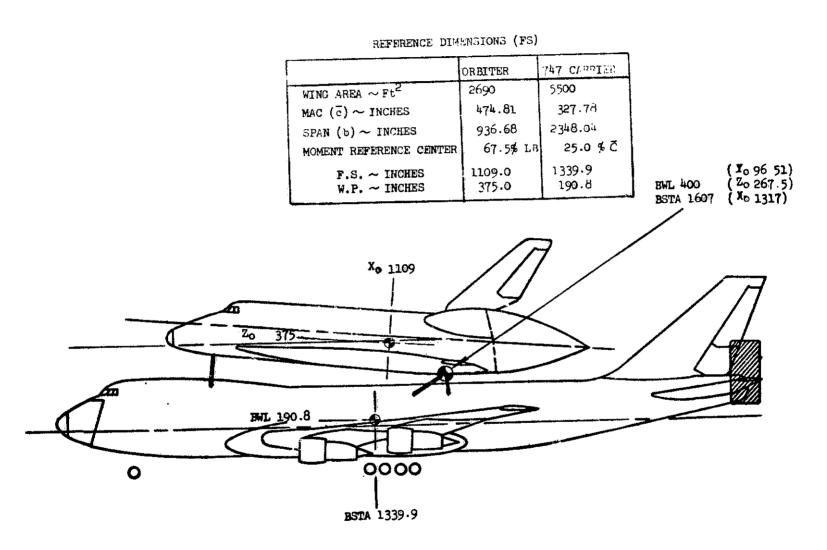
У<sub>**w**</sub>

General

Figure 1. Axis systems.

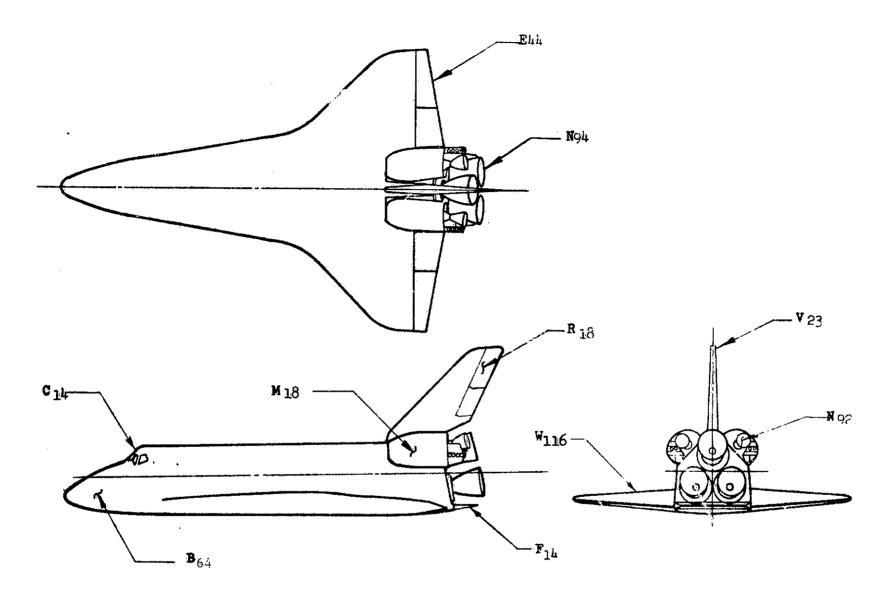


b. Orbiter/747 Angular Relations Figure 1. Axis systems

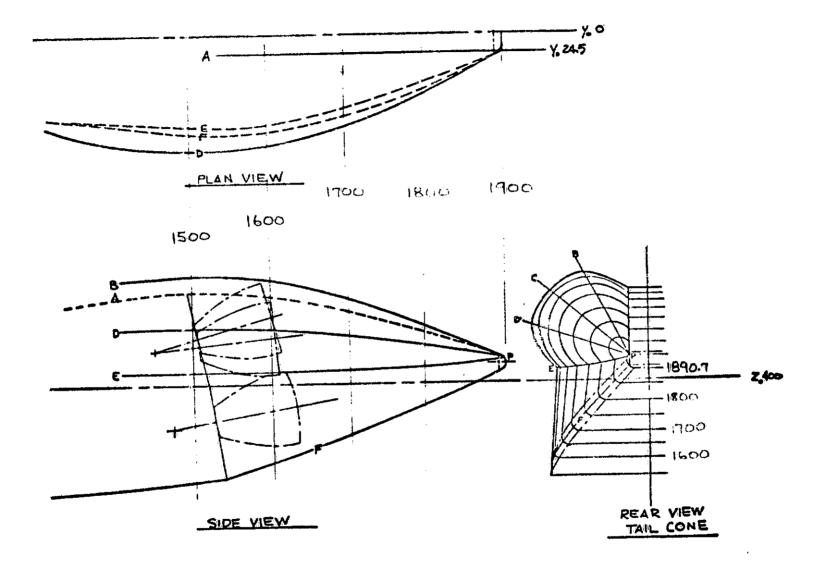


c. Orbiter/747 Flight Test Configuration Reference Dimensions Figure 1. Axis systems

E West Section Continues and the second section of

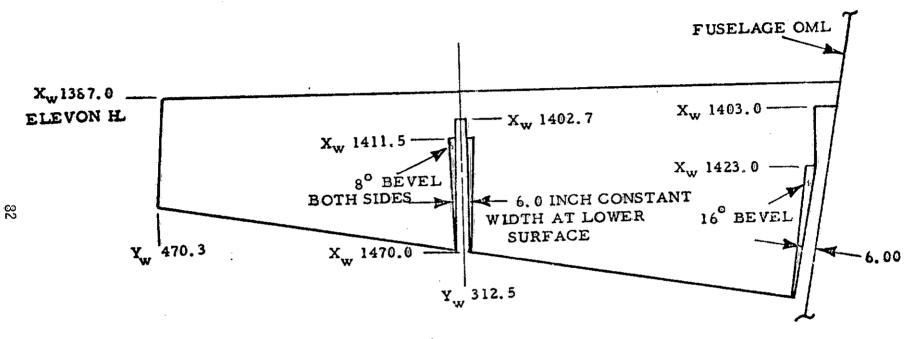


a. SSV Orbiter Configuration (VC70-000002) Figure 2. Model Instrumentation Sketches



b. Orbiter Tail Come -- TC4 (X3B)
 Figure 2. Model Instrumentation Sketches

E<sub>44</sub> elevon with 6.0 inch gaps installed. Flipper doors, centerbody pieces, and tip seals are not simulated.



(ALL DIMENSIONS ARE FULL SCALE, INCHES)

(VIEW IS PERPENDICULAR TO WING REFERENCE PLANE)

c. Elevon - E44

Figure 2. Model Instrumentation Sketches

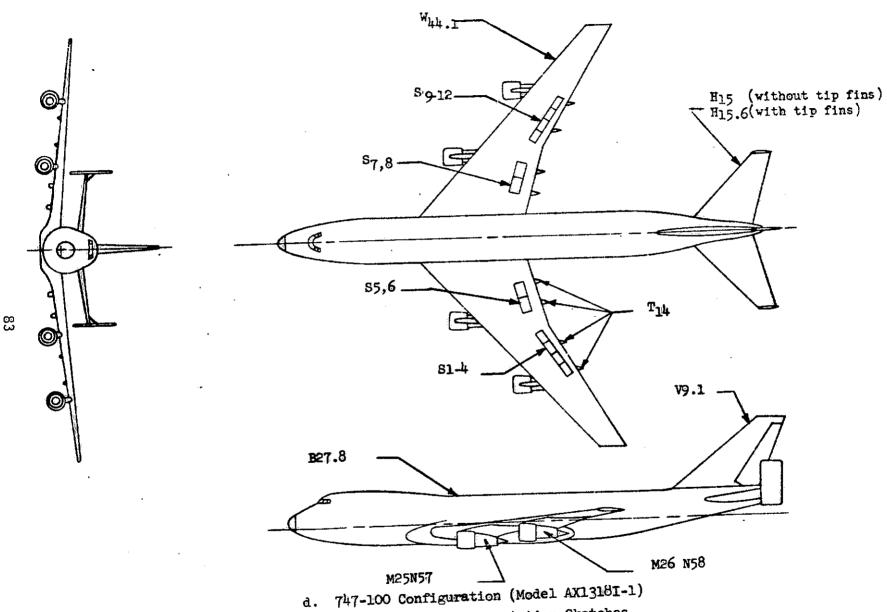
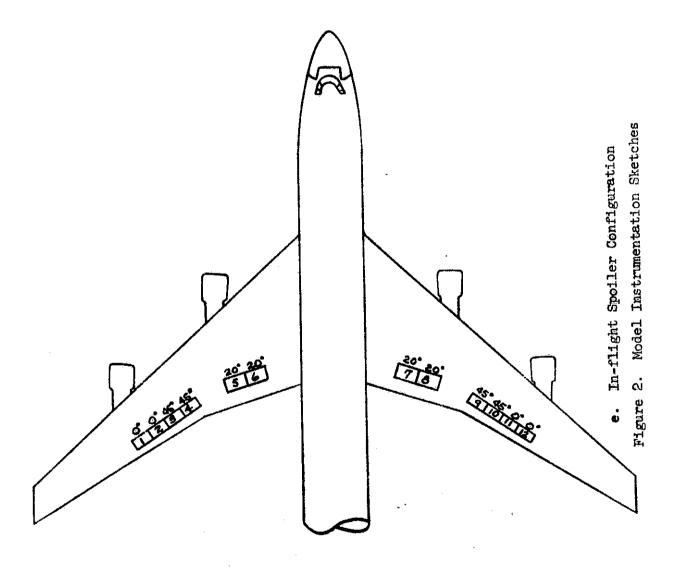
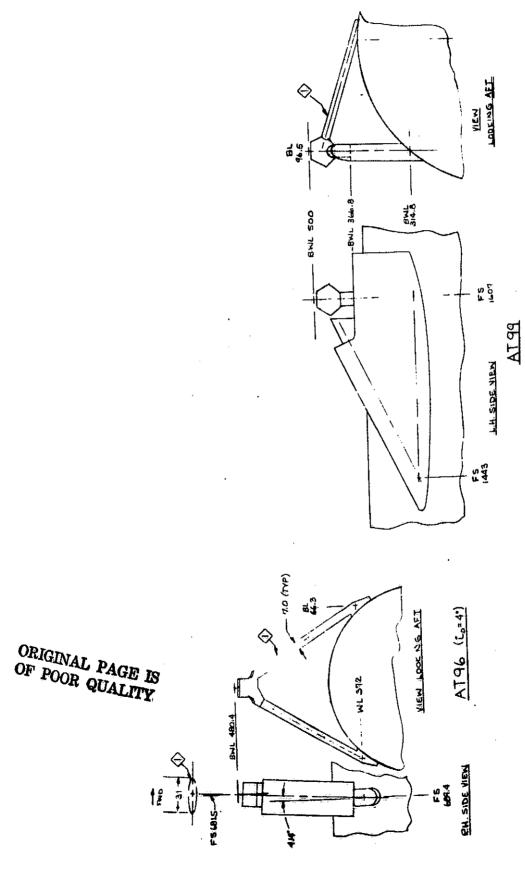
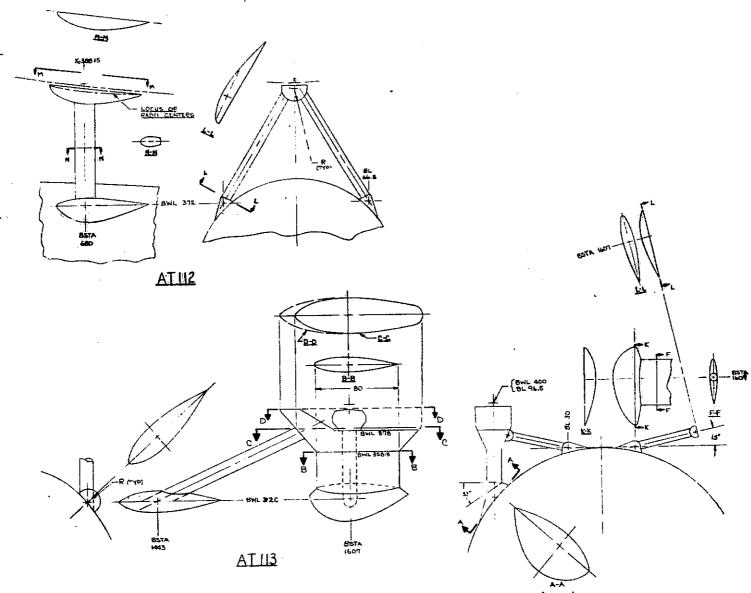


Figure 2. Model Instrumentation Sketches



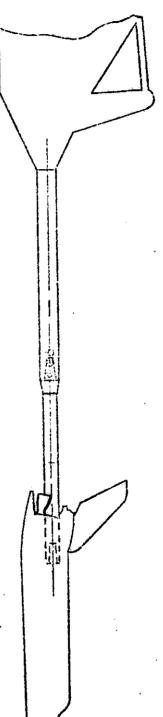


. Simulated Attach Structure AT96 and AT99 (ATx) Figure 2. Model Instrumentation Sketches



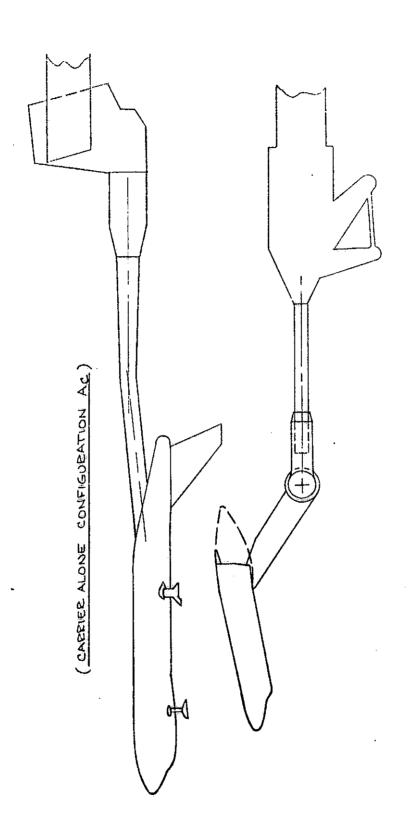
g. Simulated Attach Structure  $AT_{112}$  and  $AT_{113}$  (ATy) Figure 2. Model Instrumentation Sketches

CONFIGURATION



CONFIGURATION AS

h. Orbiter Alone Installation Sketches



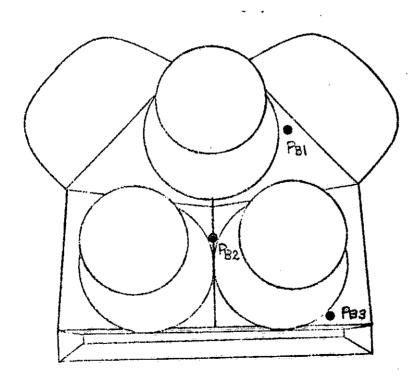
CONFIGURATION AL

 Carrier and Separation Installation Sketches Figure 2. Model Instrumentation Sketches 1)

FBI Report

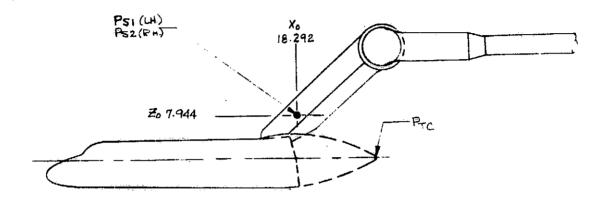
STING MOUNTED

PB3

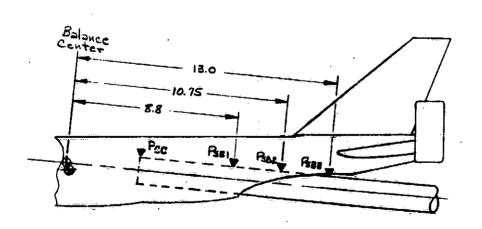


(3)

j. Orbiter Base Pressure Tap Locations
Figure 2. Model Instrumentation Sketches

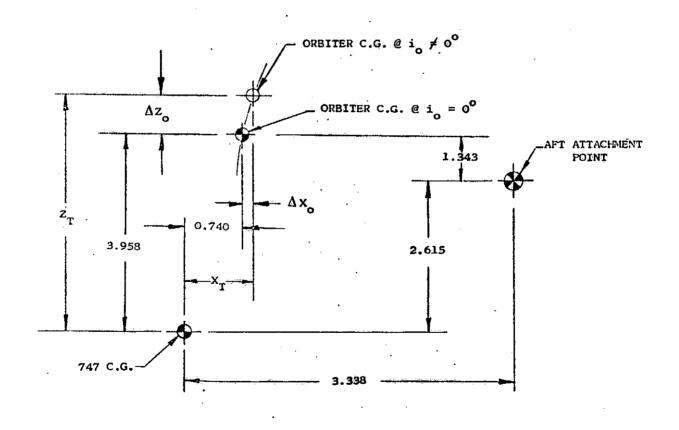


1)

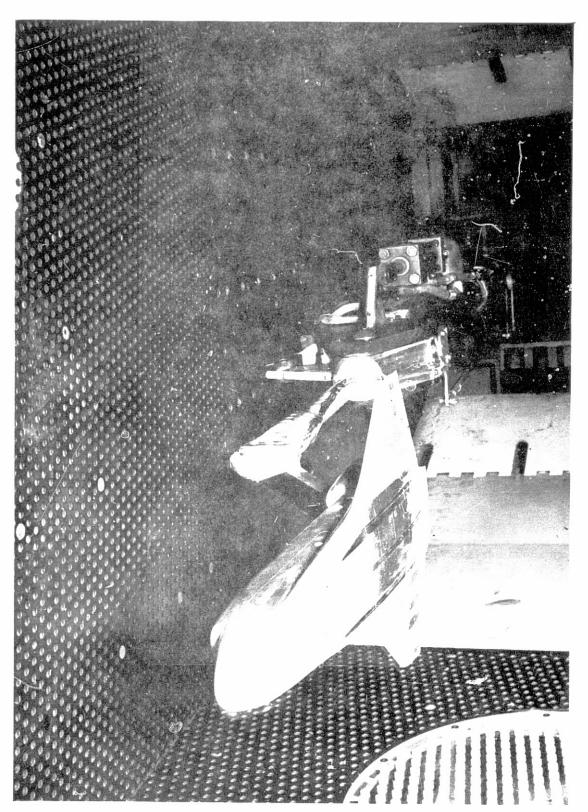


k. Sting and Strut Pressure Tap LocationsFigure 2. Model Instrumentation Sketches

$$\Delta x_0 = 2.925 \text{ COS } (i_0 + 27.336)$$
 $\Delta z_0 = 2.925 \text{ S1H } (i_0 + 27.336) - 1.343$ 
 $X_{\text{TRANSFER}} = 0.740 + \triangle x_0$ 
 $Z_{\text{TRANSFER}} = 3.958 + \triangle z_0$ 

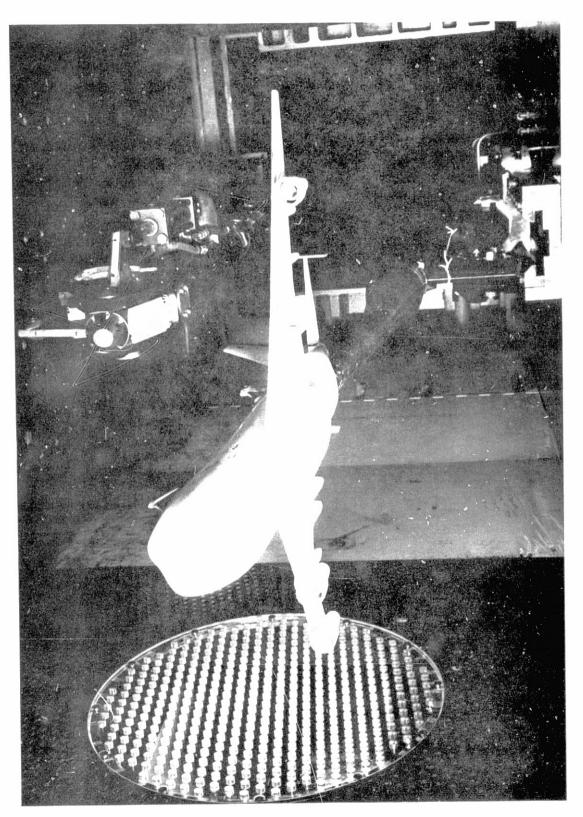


1. Orbiter/747 Moment Transfers (Mated)
Figure 2. Model Instrumentation Sketches

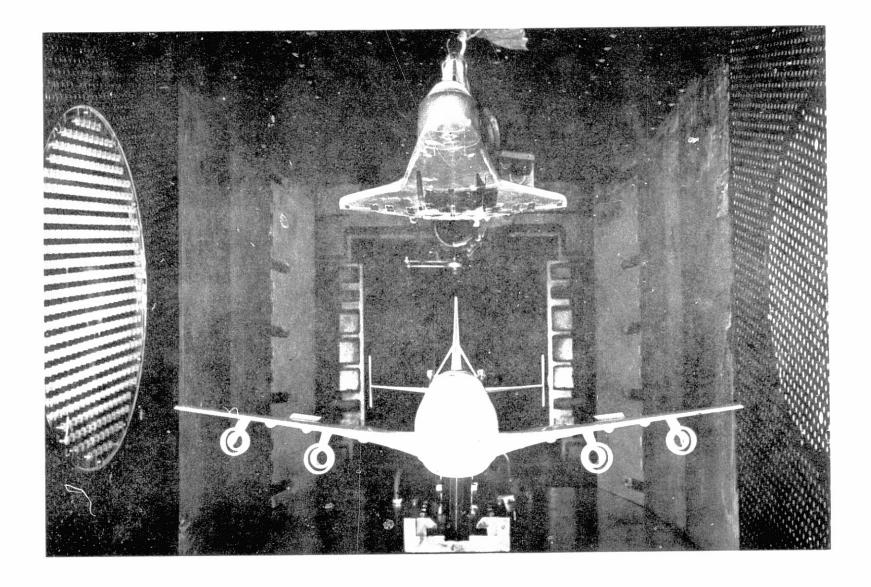


a. Orbiter Alone

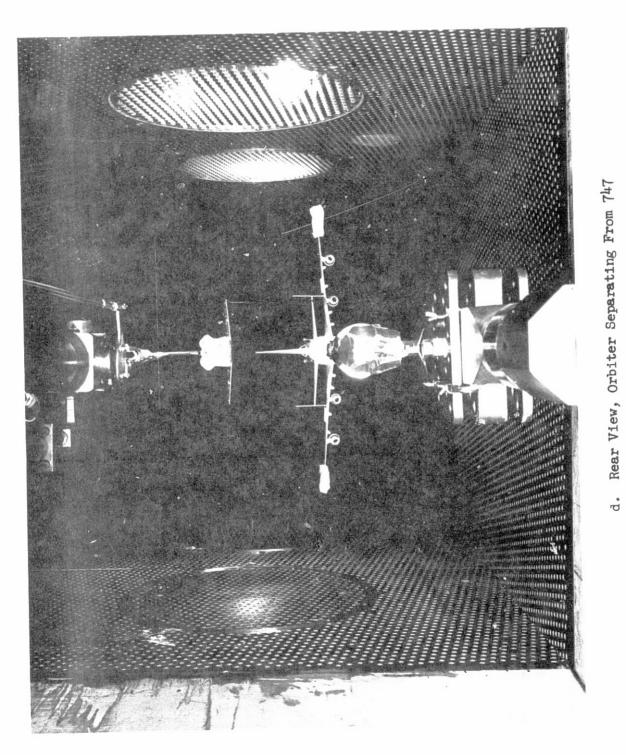
gure 3. Model Installation



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c. Front View, Orbiter Separating From 747
Figure 3. - Model installation



1. Rear View, Orbiter Separation Figure 3. Model installation

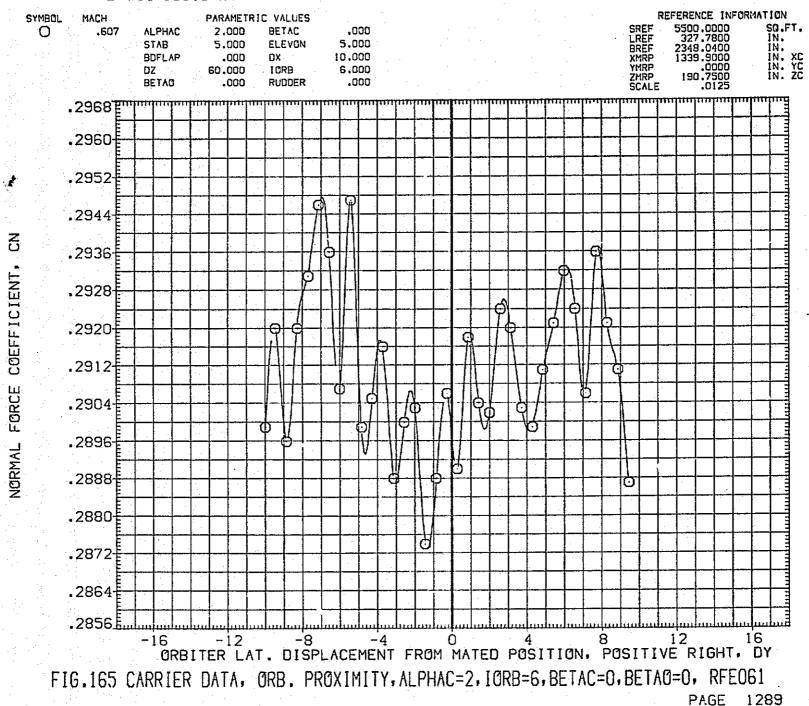
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DATA FIGURES

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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE061)

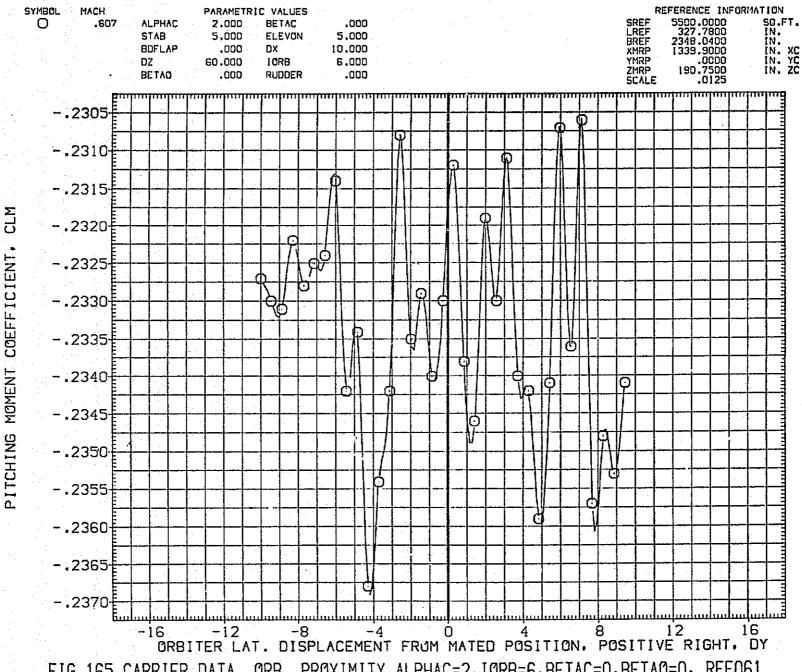
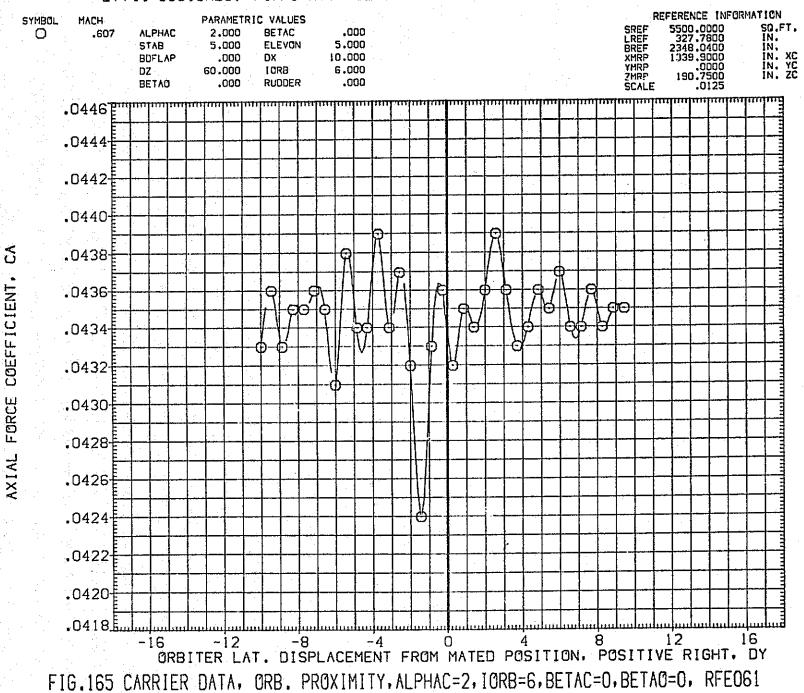


FIG.165 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO61
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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE061)



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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE061)

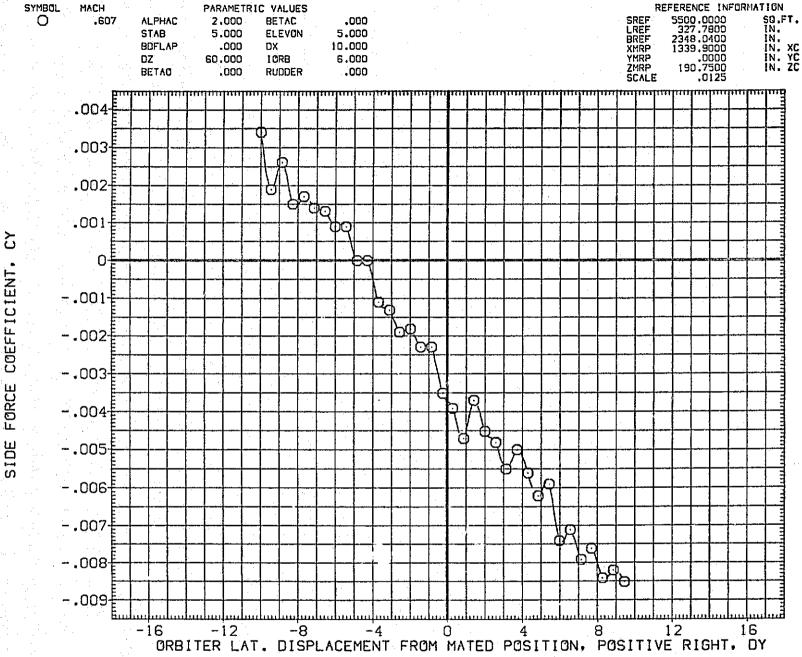
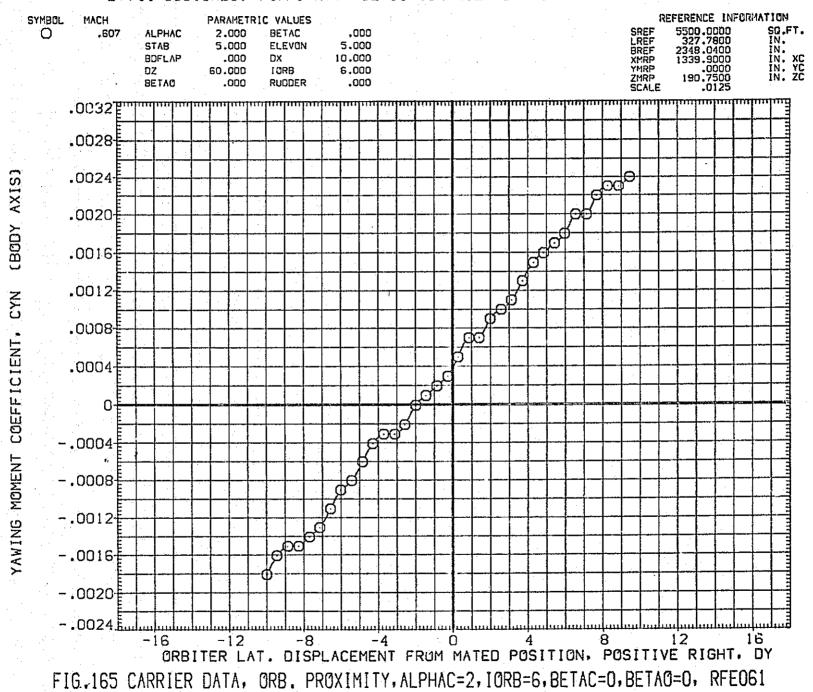


FIG.165 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO61
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFEGS)



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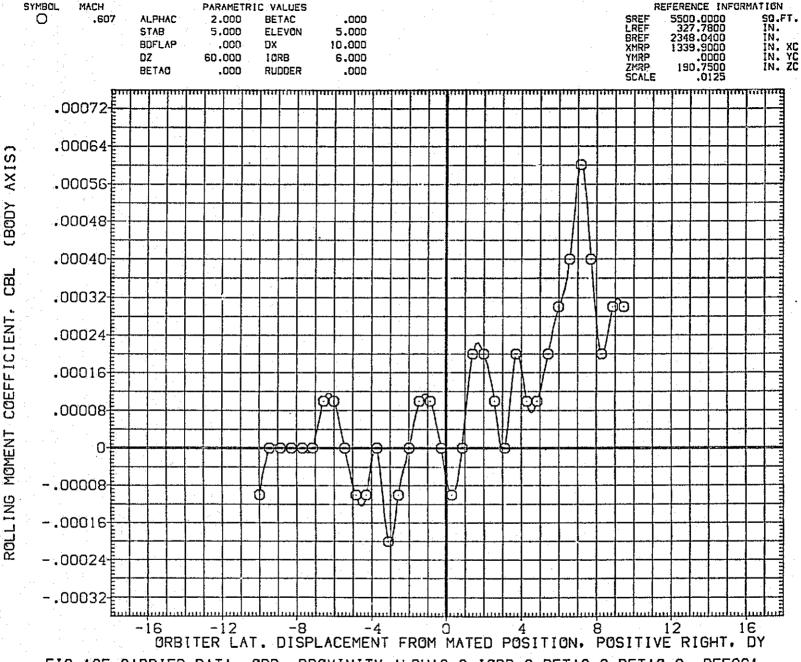


FIG.165 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO61

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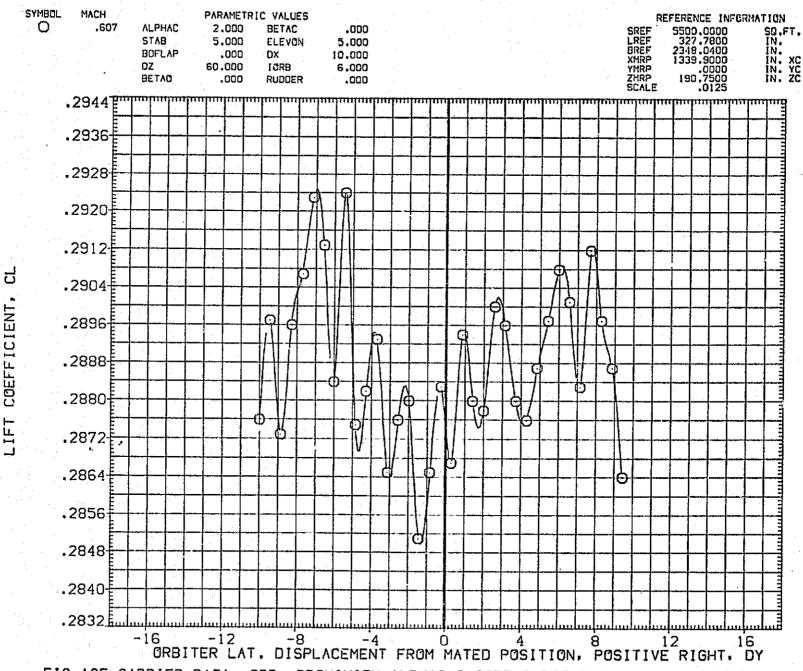


FIG.165 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO61

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE061)

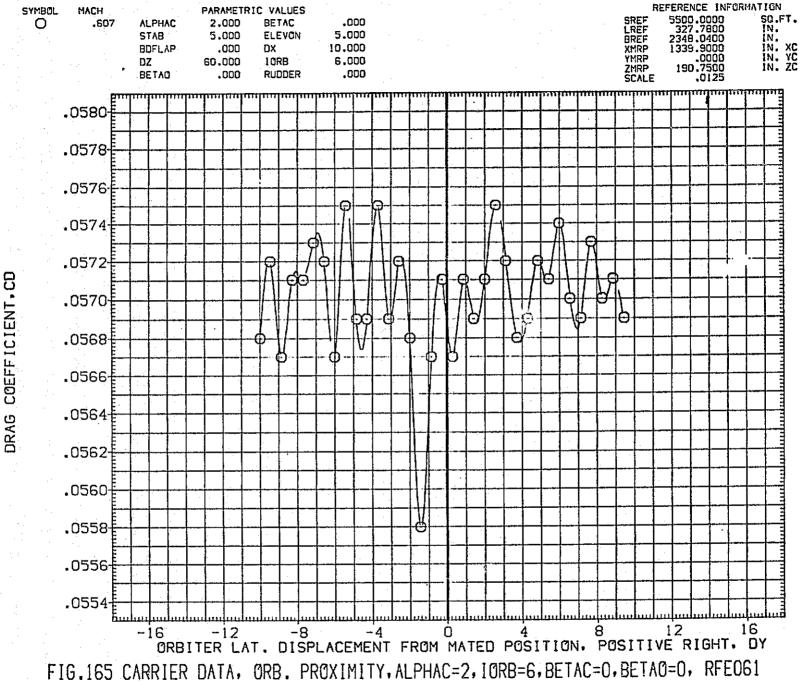


FIG.165 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO61 PAGE 1296

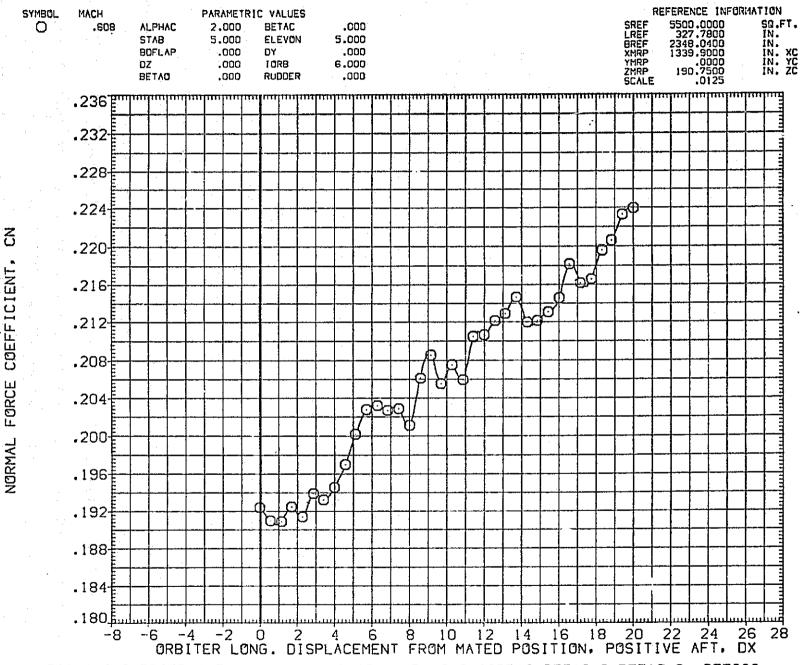


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62

## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE062)

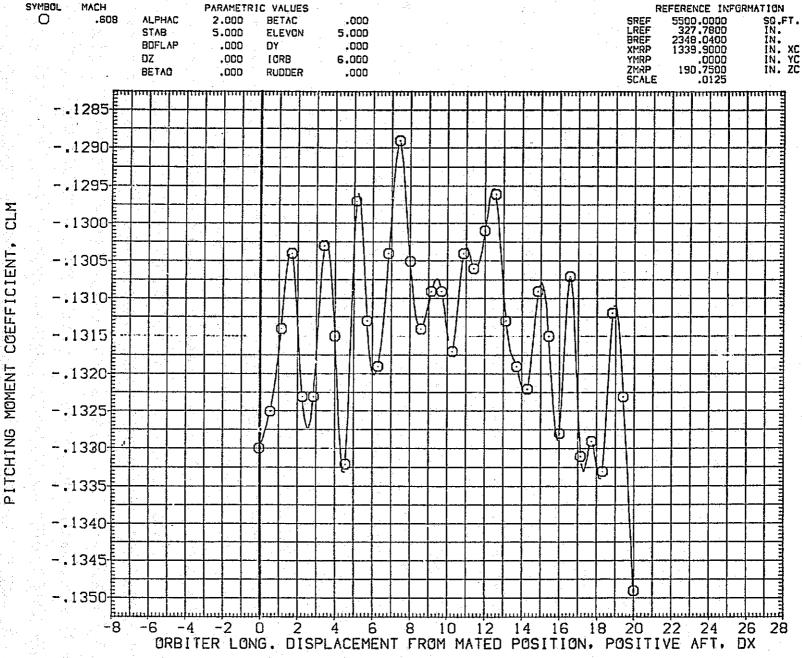


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62
PAGE 1298

. . .

11

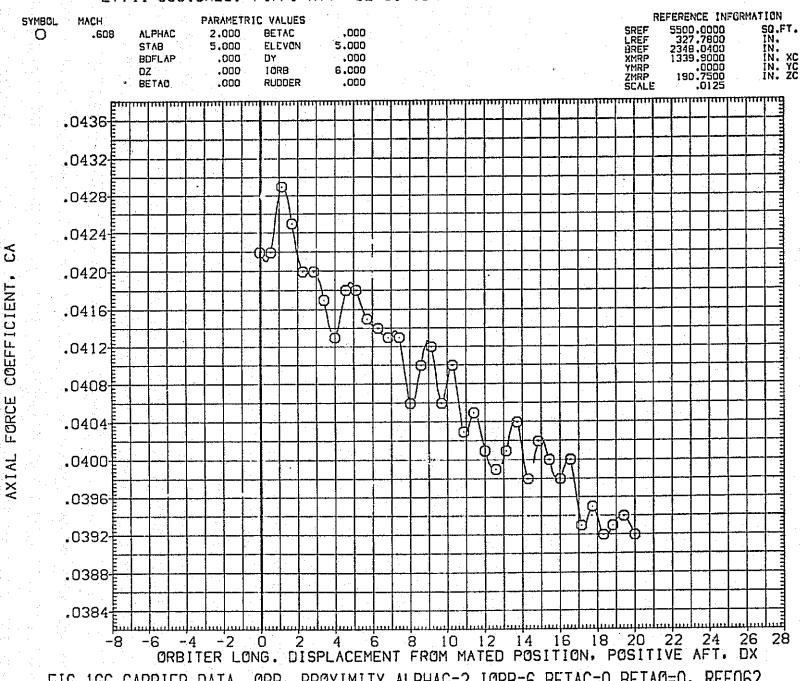
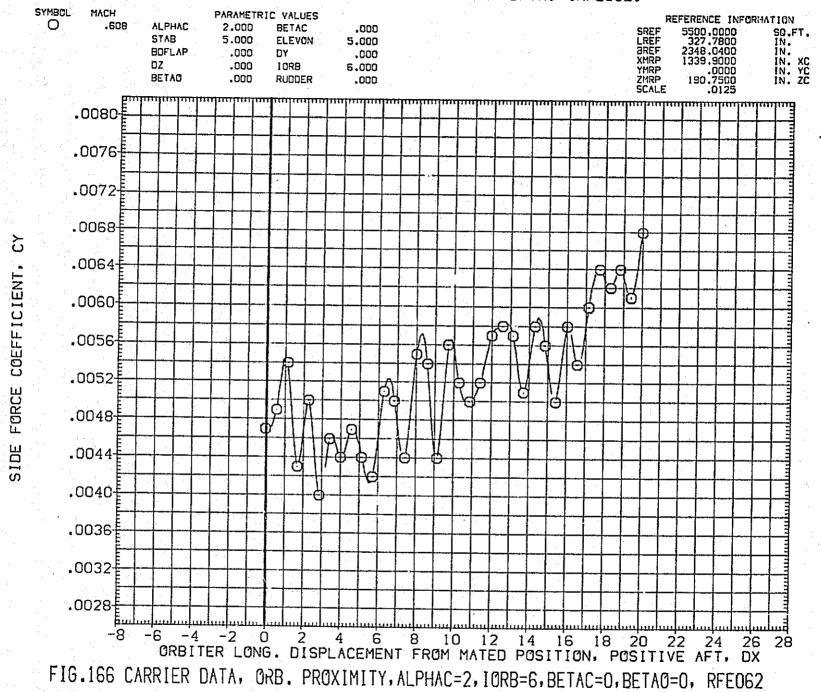
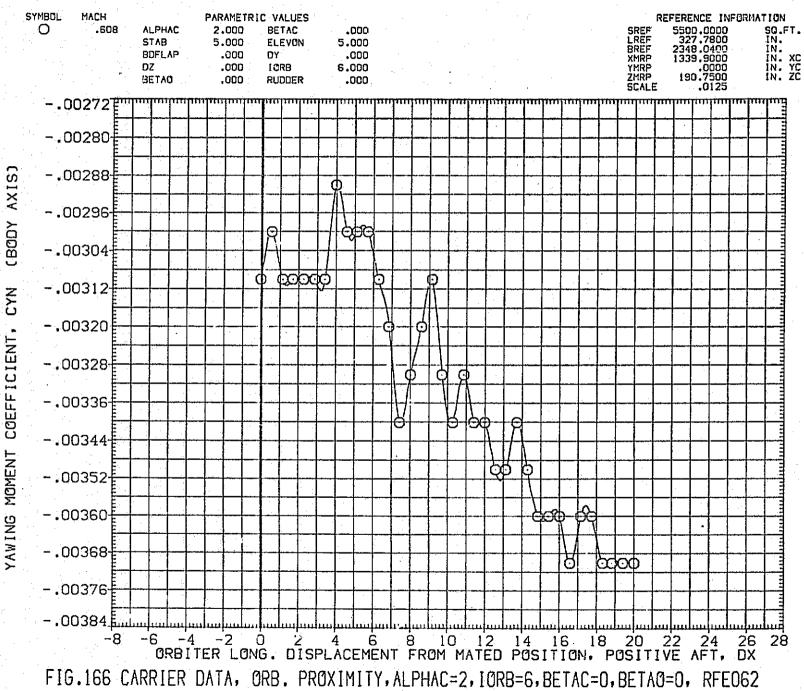


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE062)



1300



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE062)

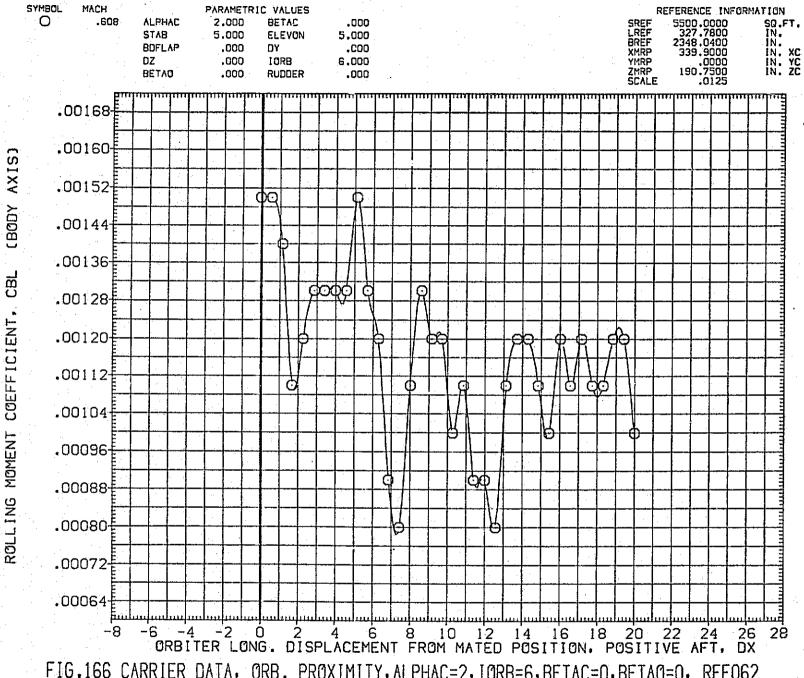


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62

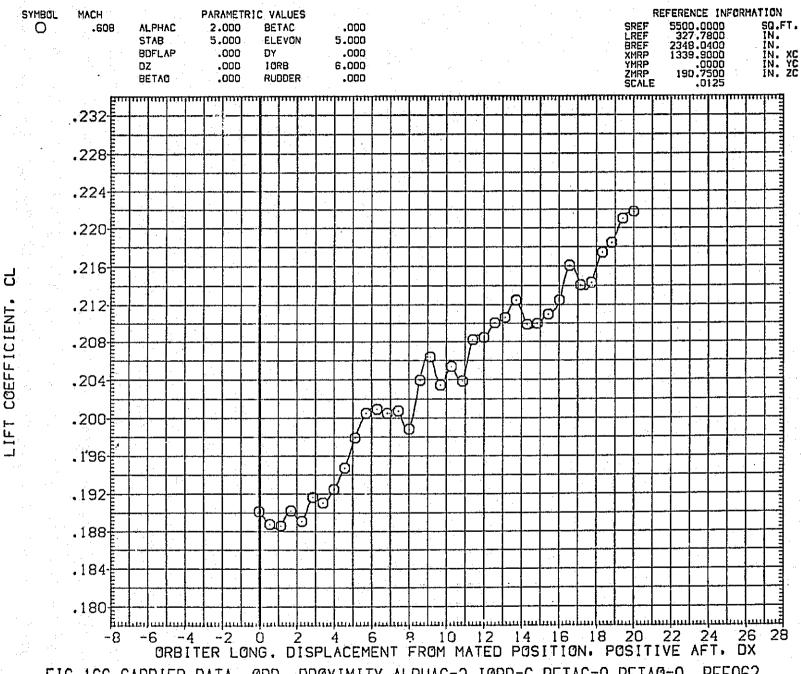


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE062)

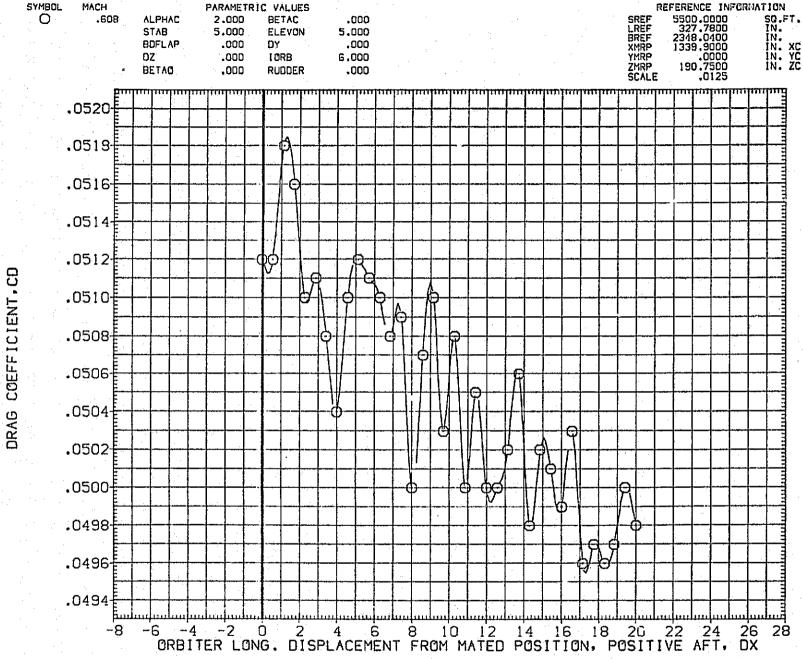


FIG.166 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO62

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)

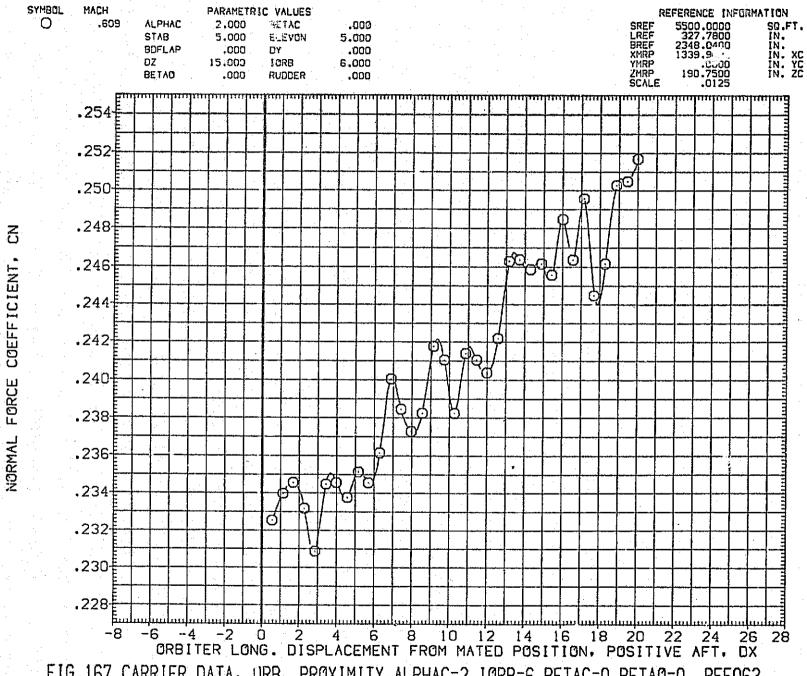


FIG.167 CARRIER DATA, URB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE063)

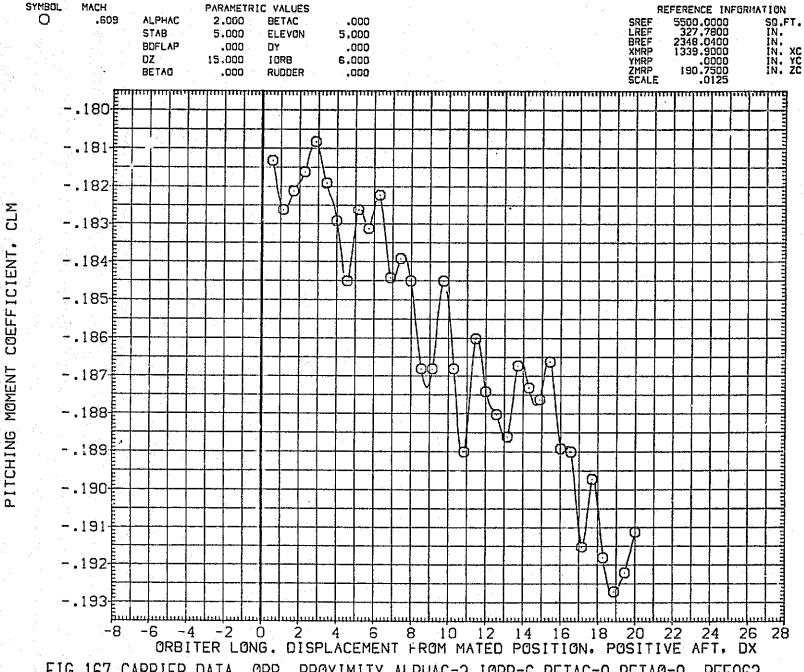


FIG.167 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE063)

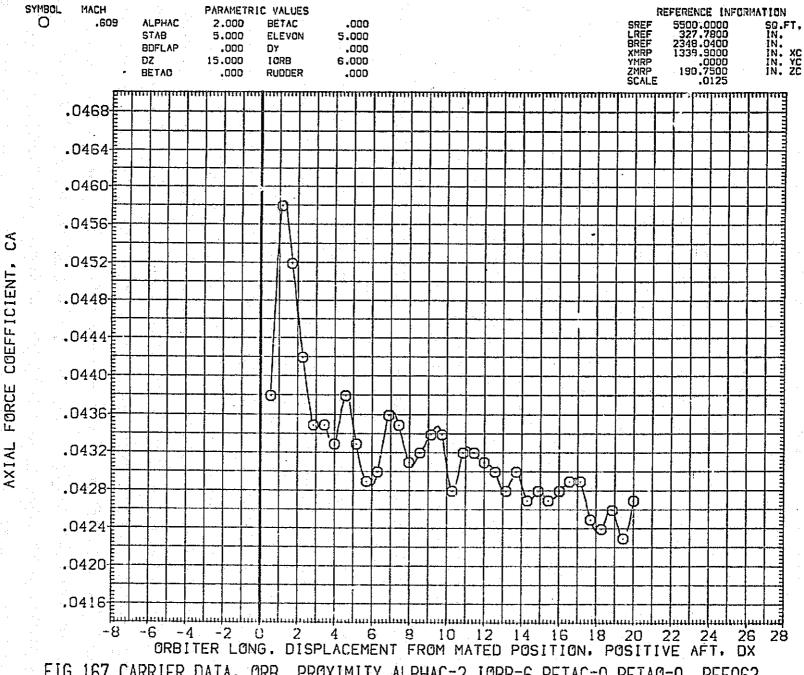


FIG.167 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)

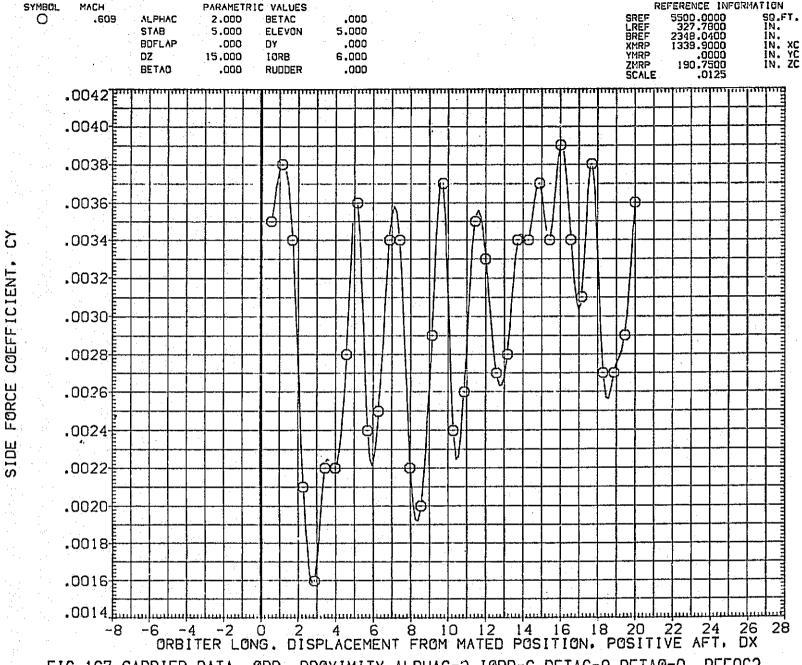
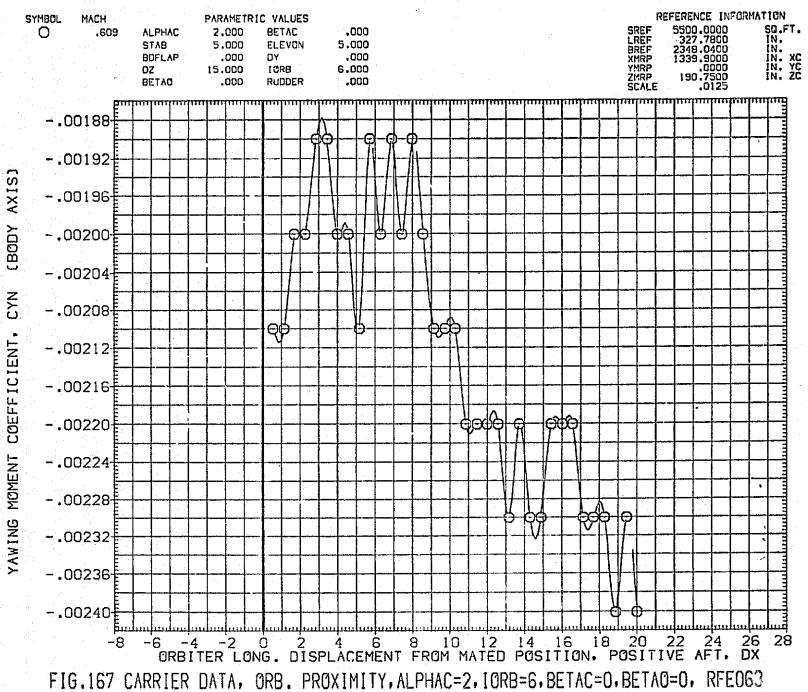


FIG.167 CARRIER DATA, ORB. PROXIMITY.ALPHAC=2.IORB=6.BETAC=0.BETAO=0. RFEO63

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)

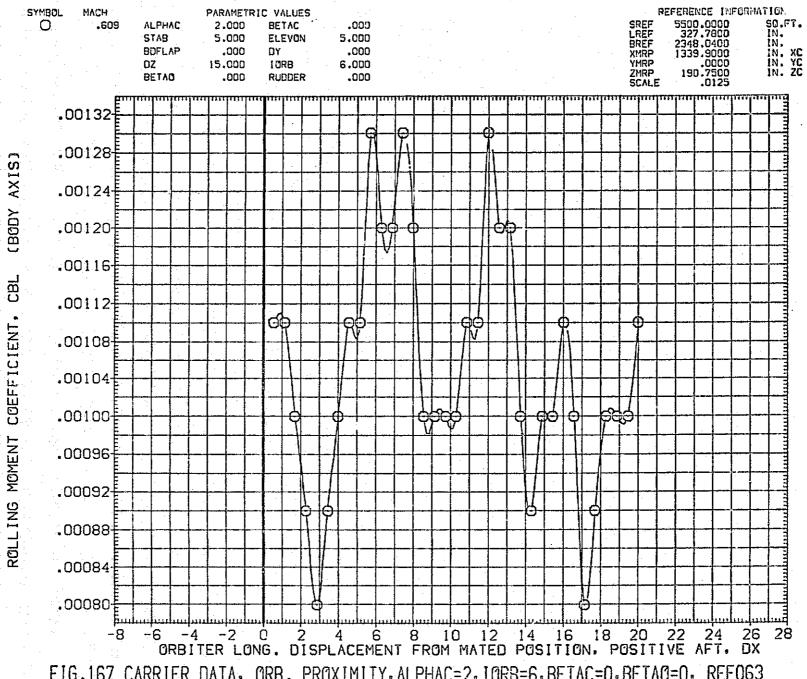


FIG.167 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)

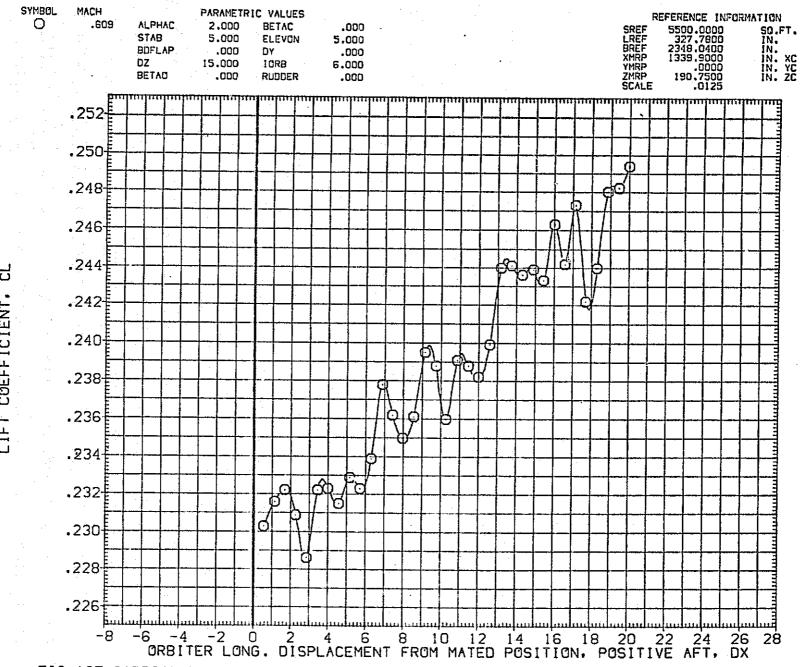


FIG.167 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE063)

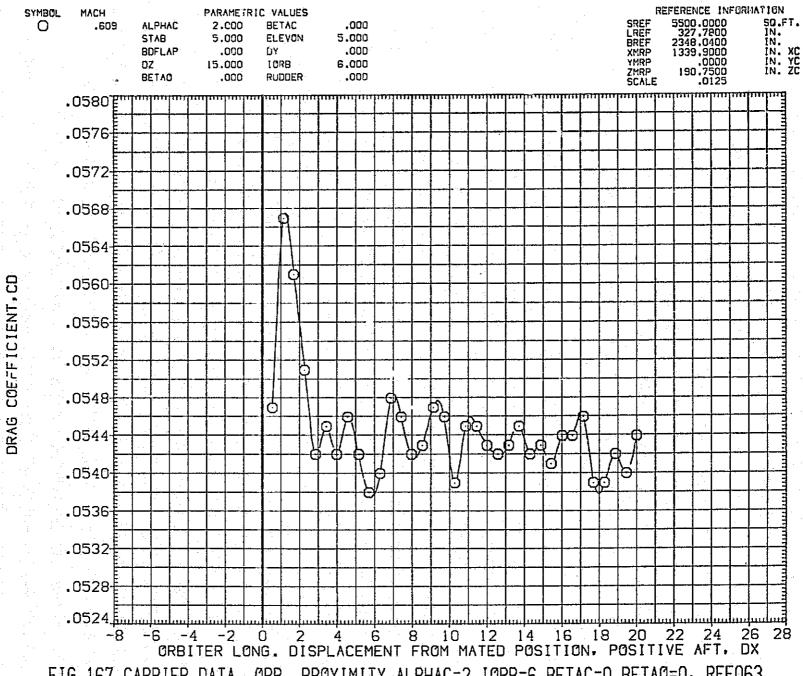


FIG.167 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO63

PAGE 1312

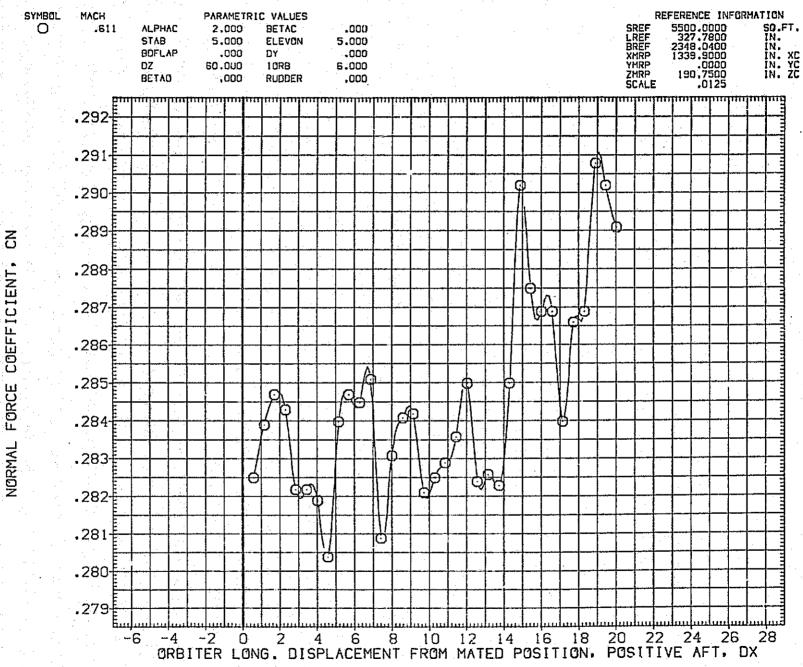
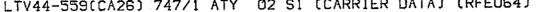


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, EETAC=0, BETAO=0, RFEO64
PAGE 1313



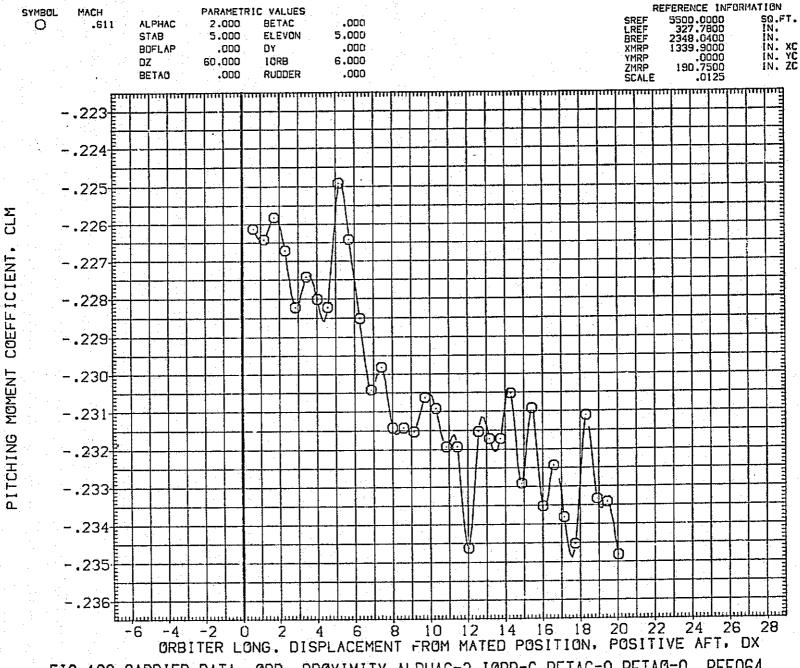


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE064
PAGE 1314

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE064)

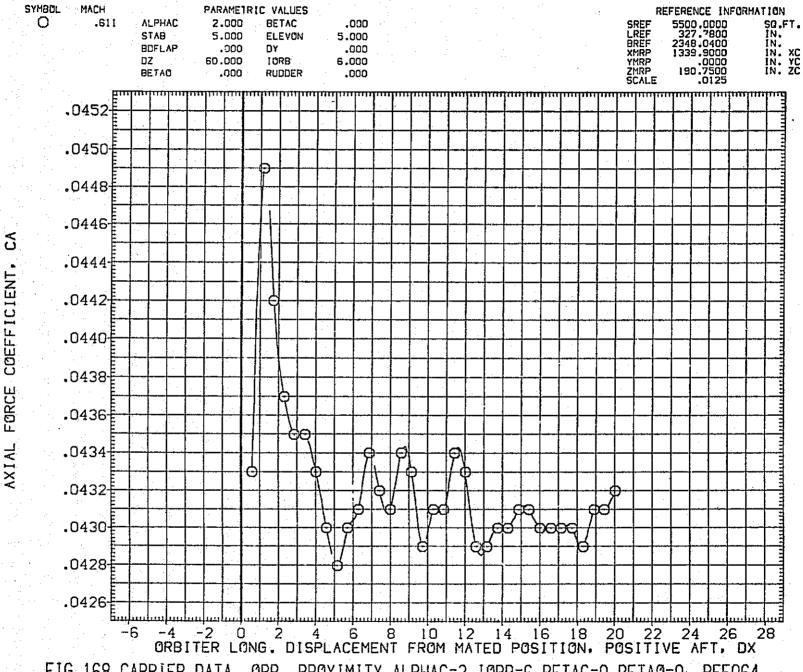


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO64

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE064)

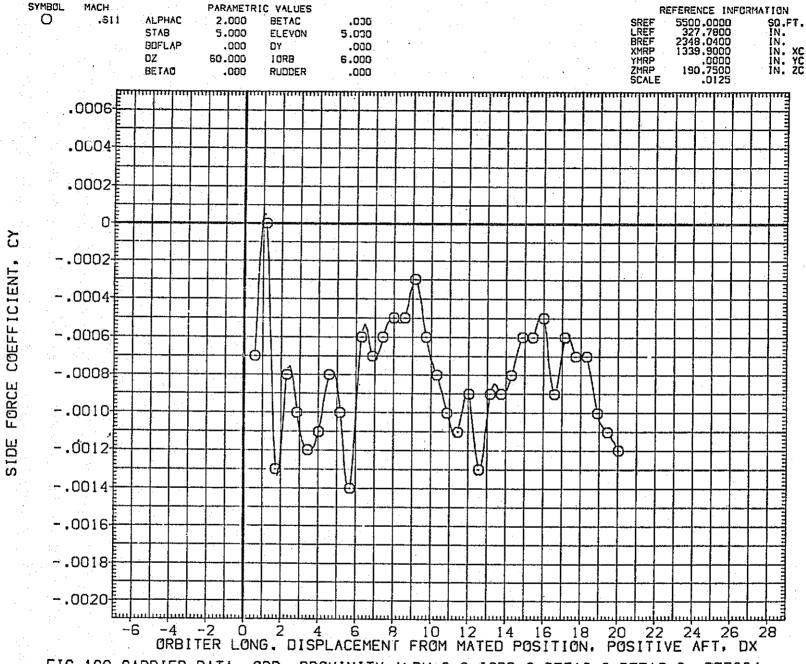
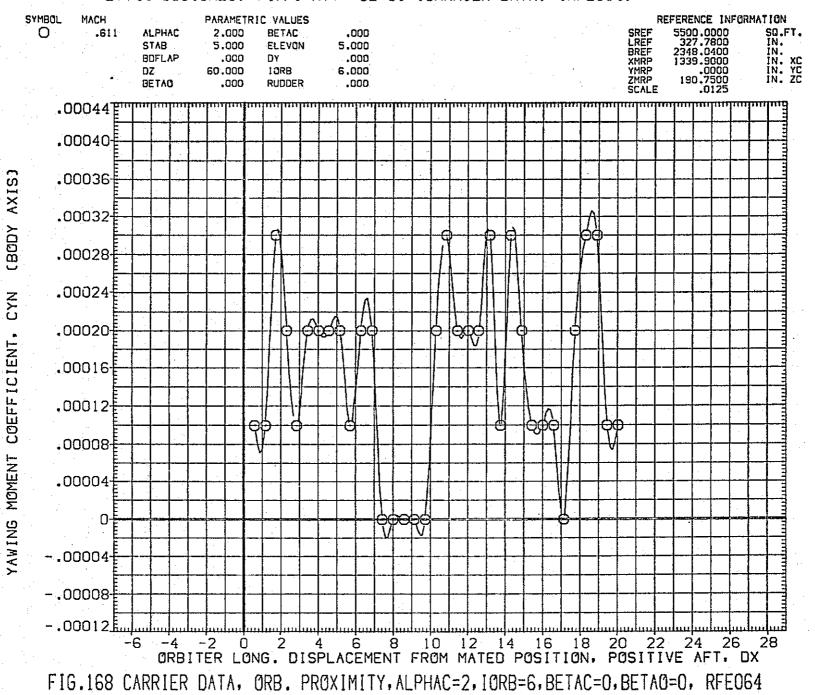


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE064
PAGE 1316

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE064)



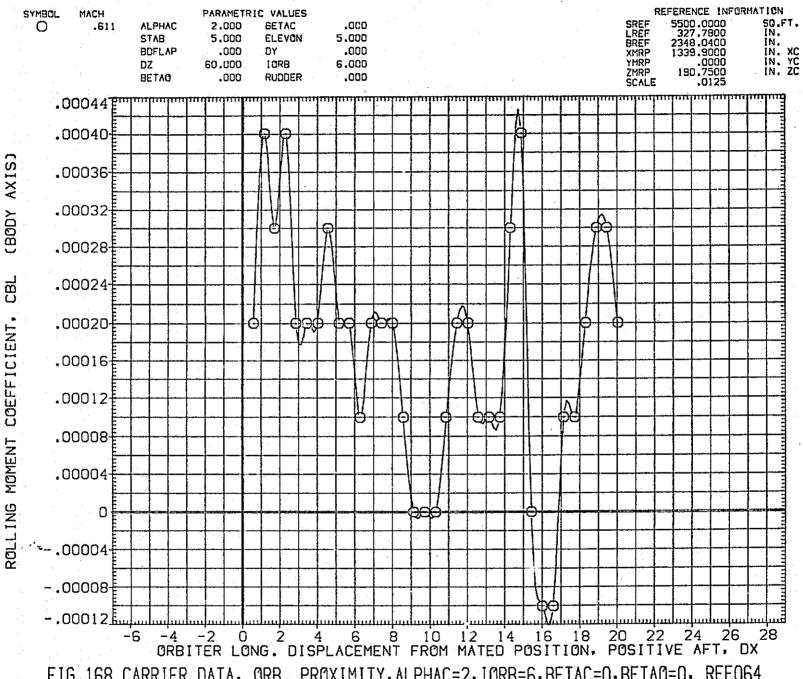


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE064
PAGE 1318

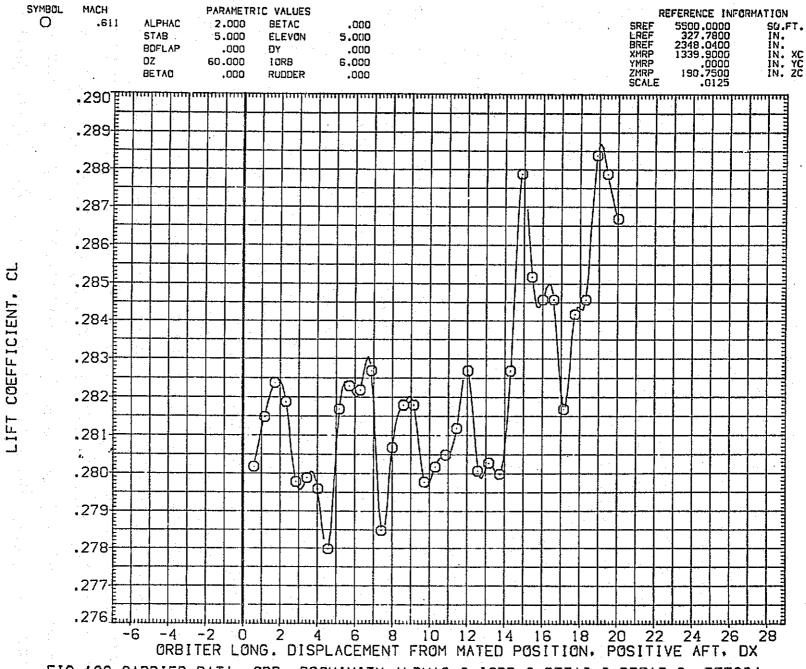


FIG.168 CARRIER DATA, ORB. PROXIMITY.ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO64

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE064)

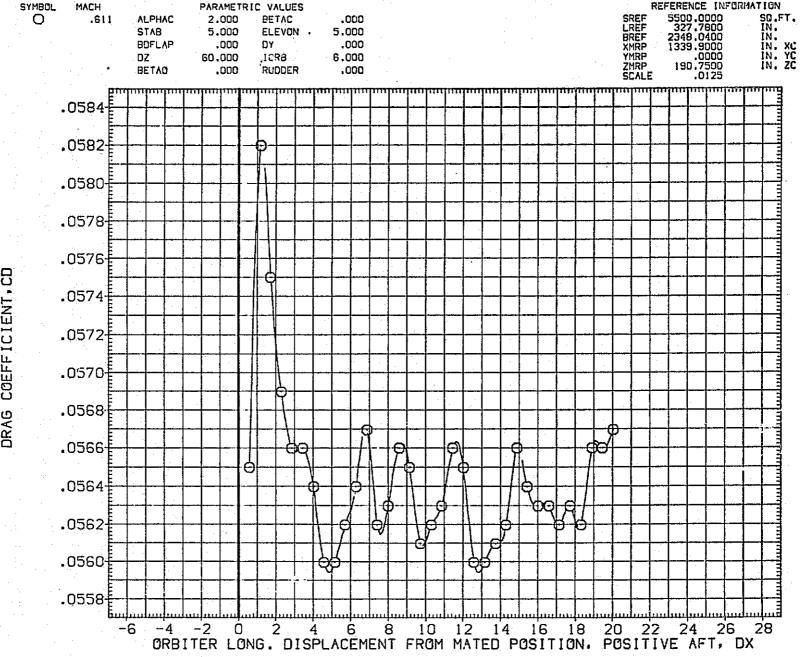


FIG.168 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO64

PAGE 1320

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE065)

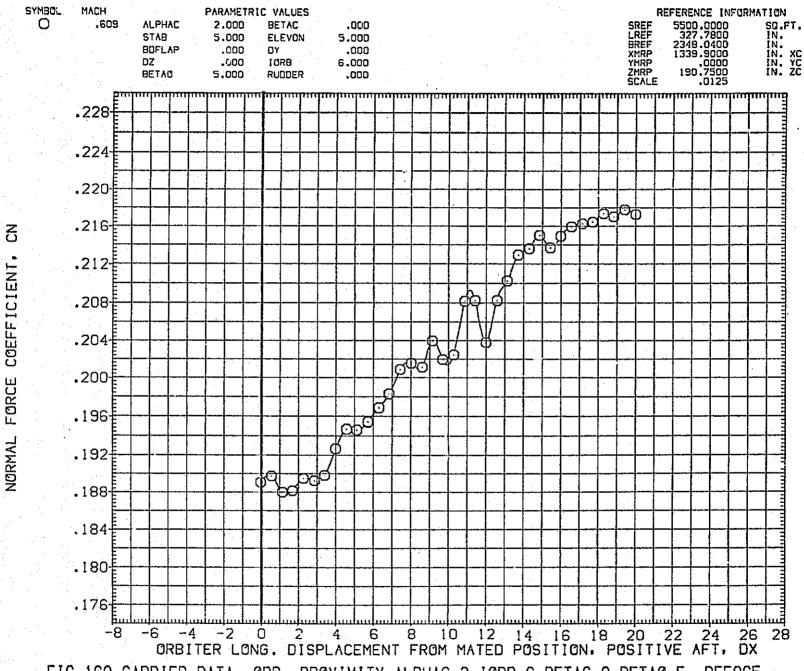


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65

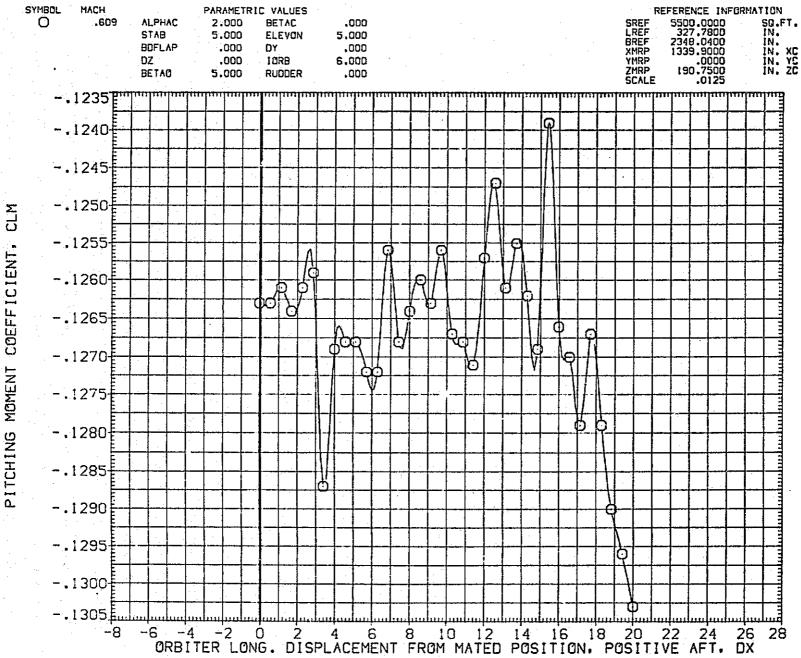


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65
PAGE 1322

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE065)

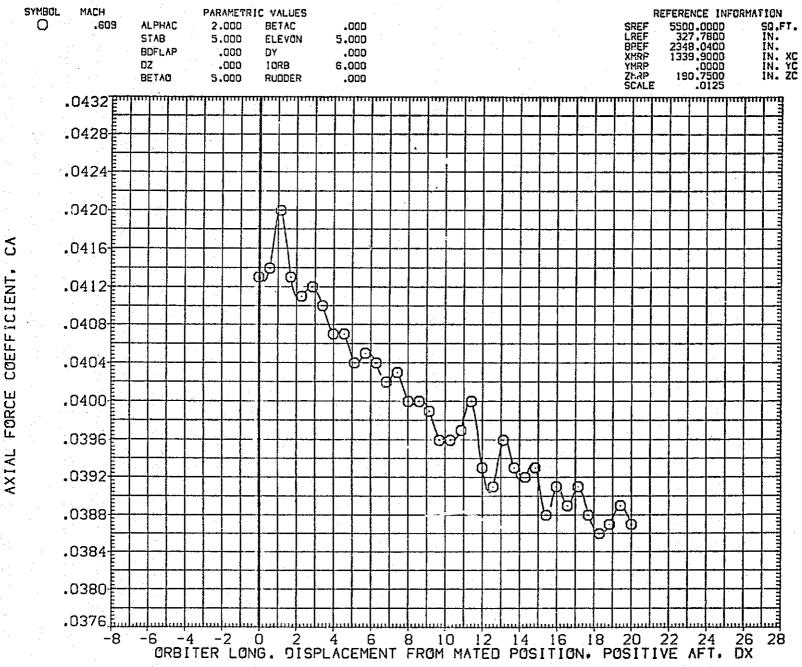


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE065)

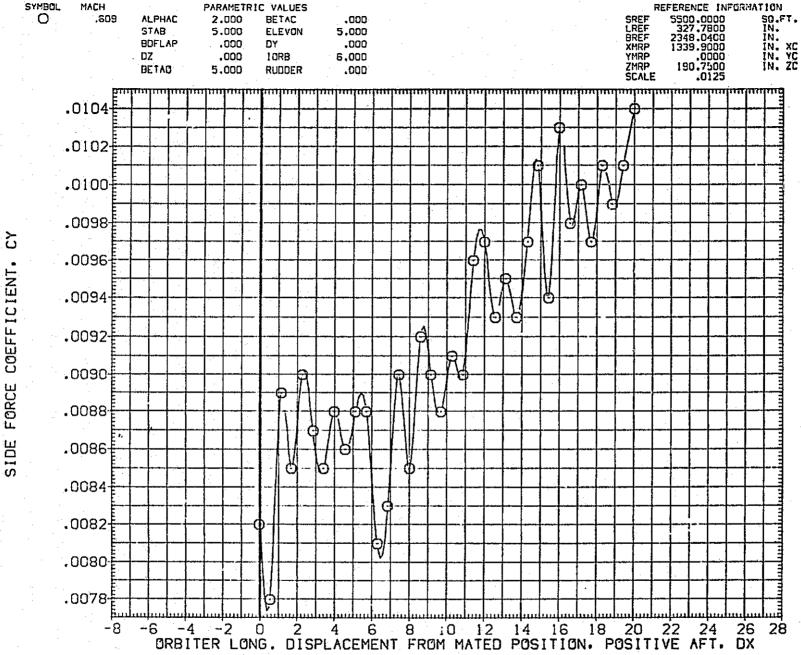
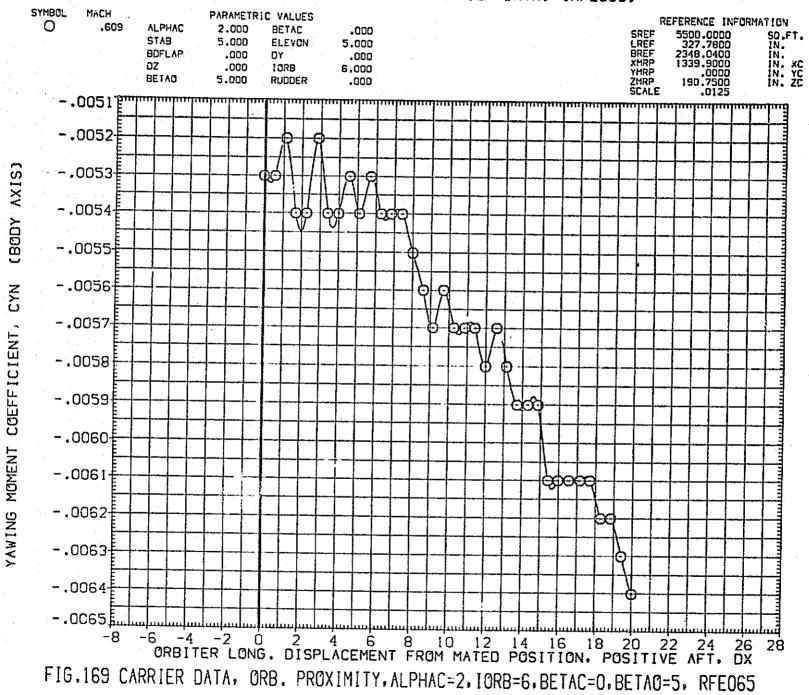


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE065)



LTV44~559(CA26) 747/1 ATY 02 S! (CARRIER DATA) (RFE065)

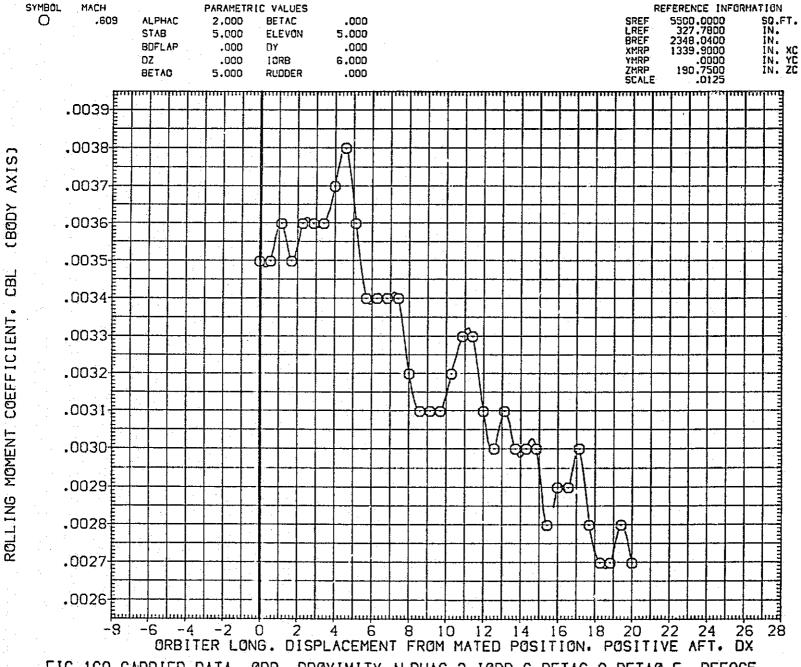
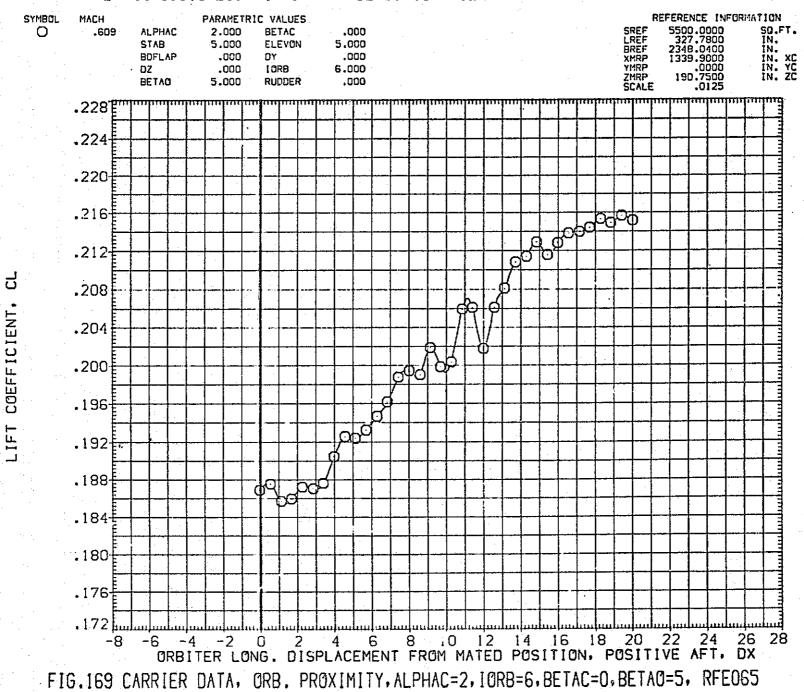


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE065)



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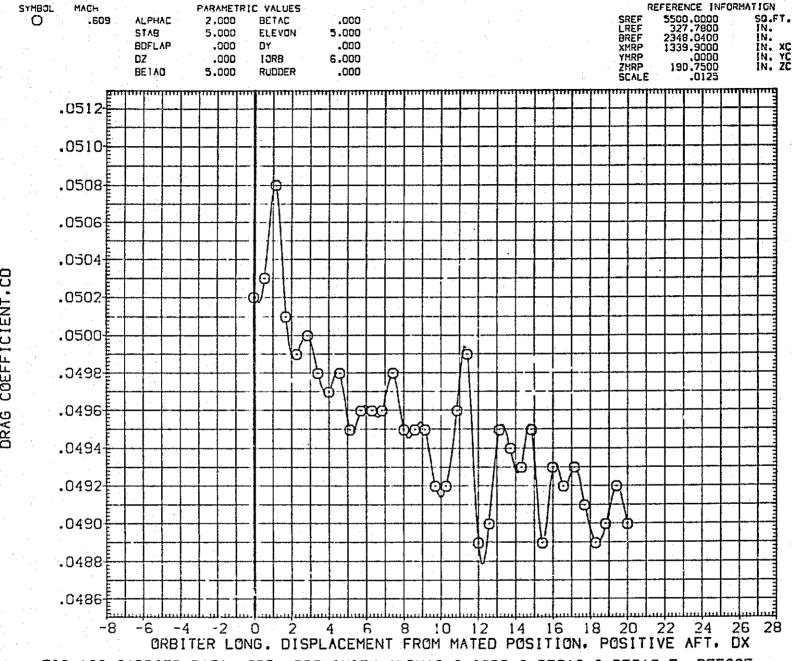


FIG.169 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO65

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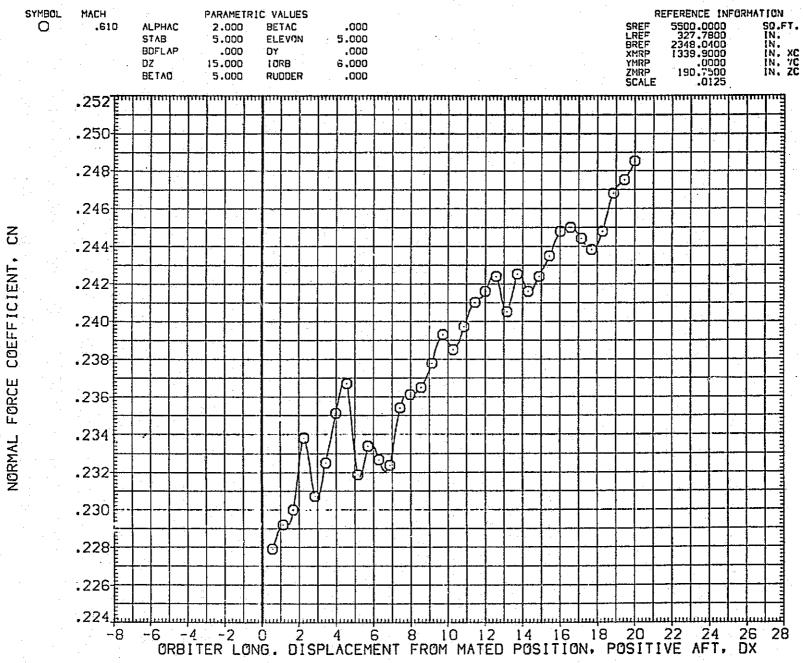


FIG.170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66

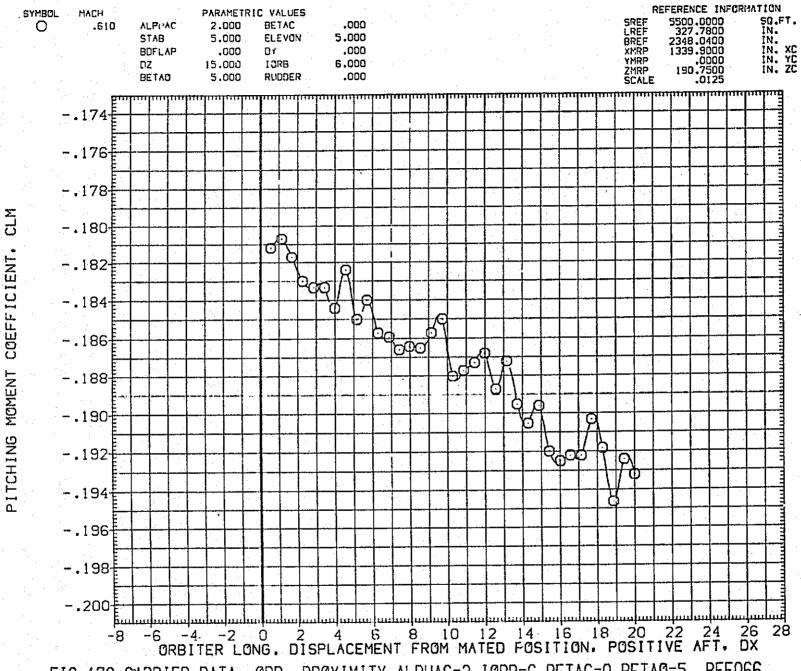


FIG. 170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66
PAGE 1330

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE066)

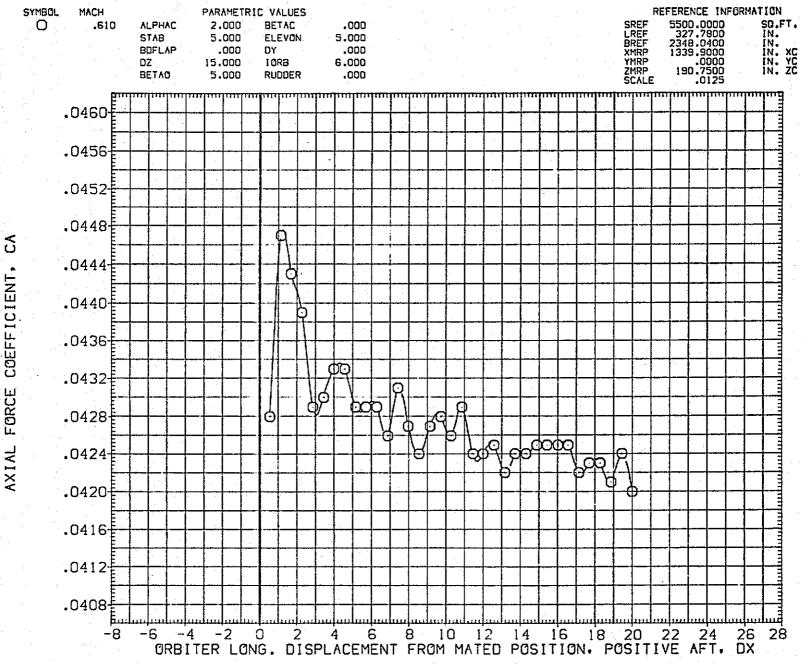
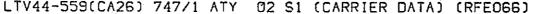


FIG.170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66
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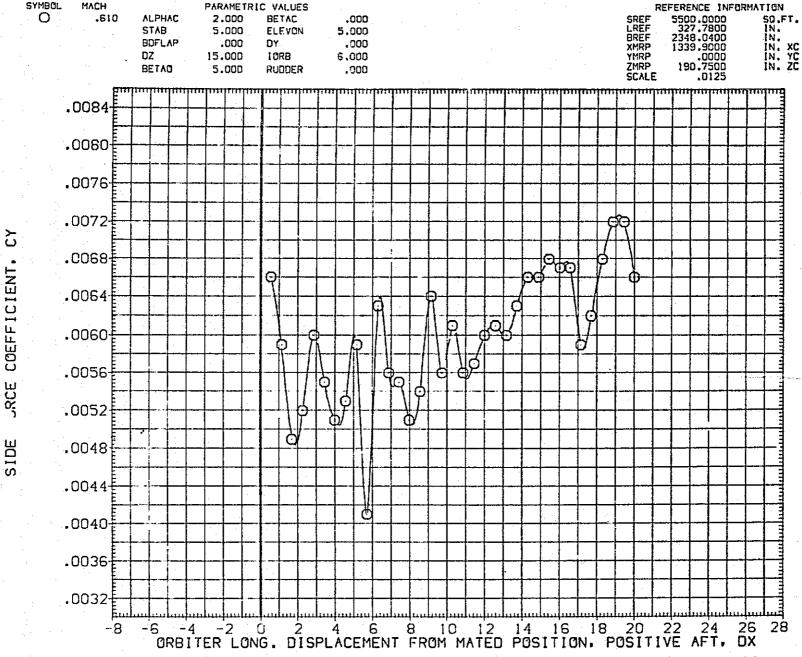


FIG.170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66
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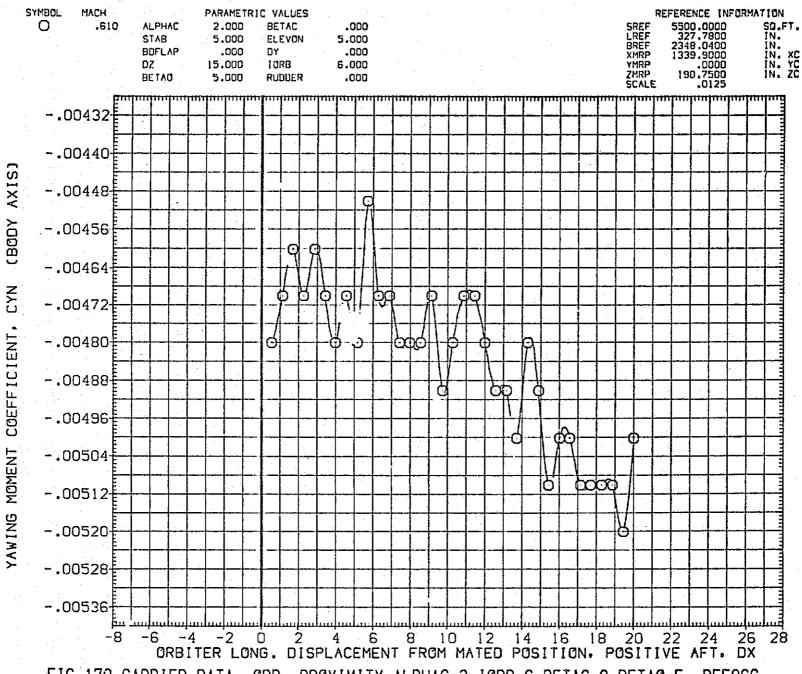


FIG.170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE066)

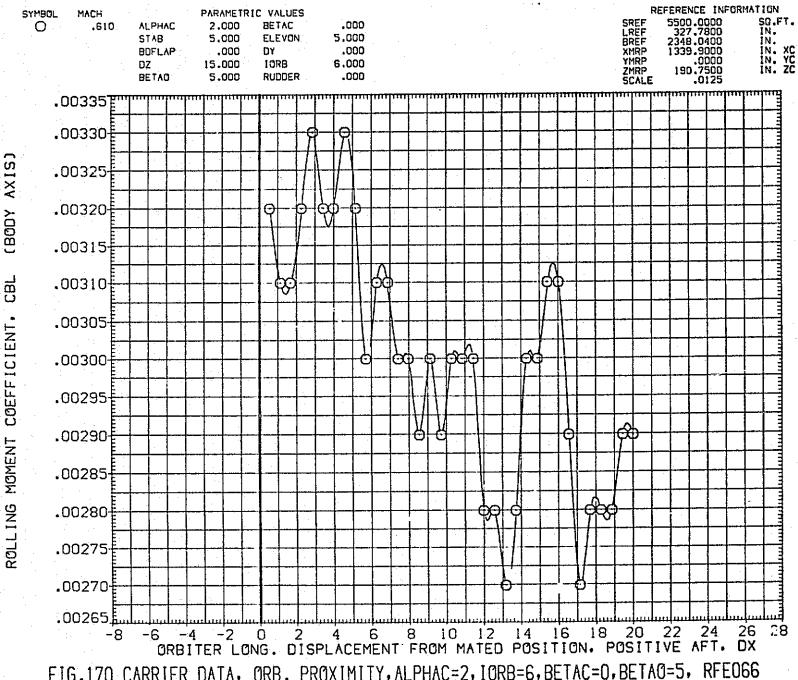
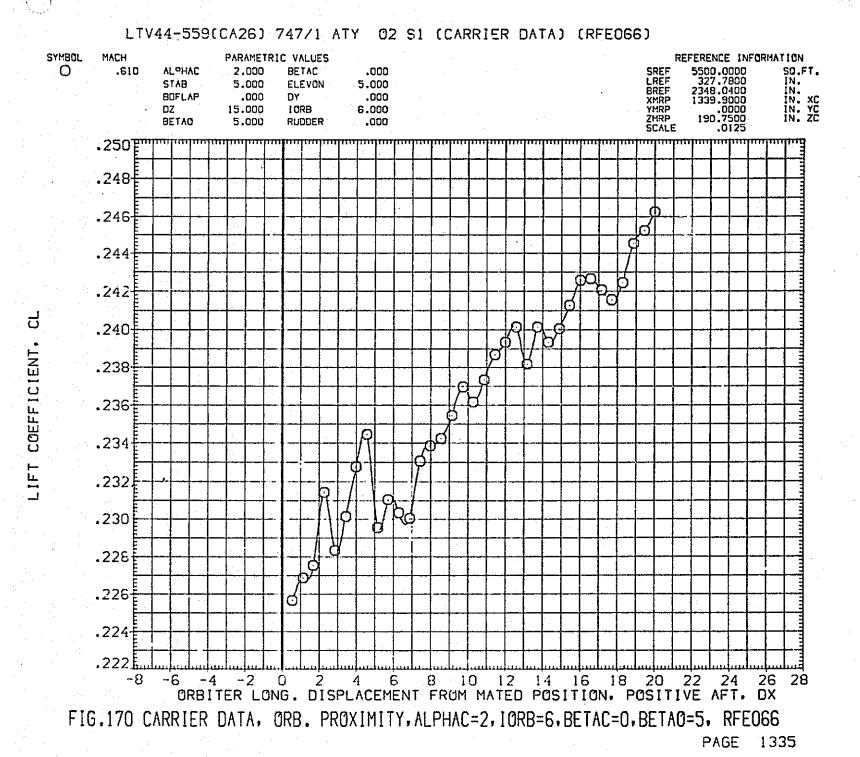


FIG. 170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66 PAGE 1334



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE066)

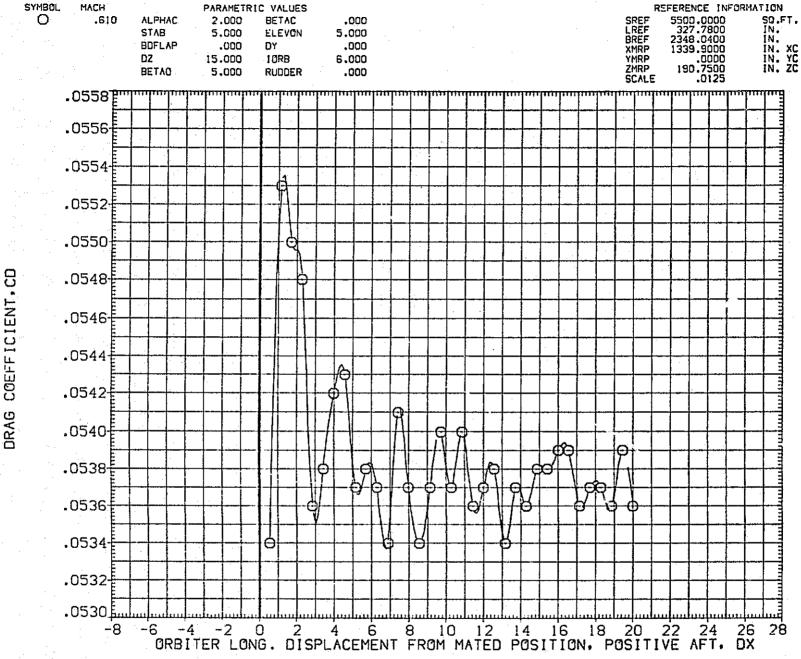


FIG.170 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO66

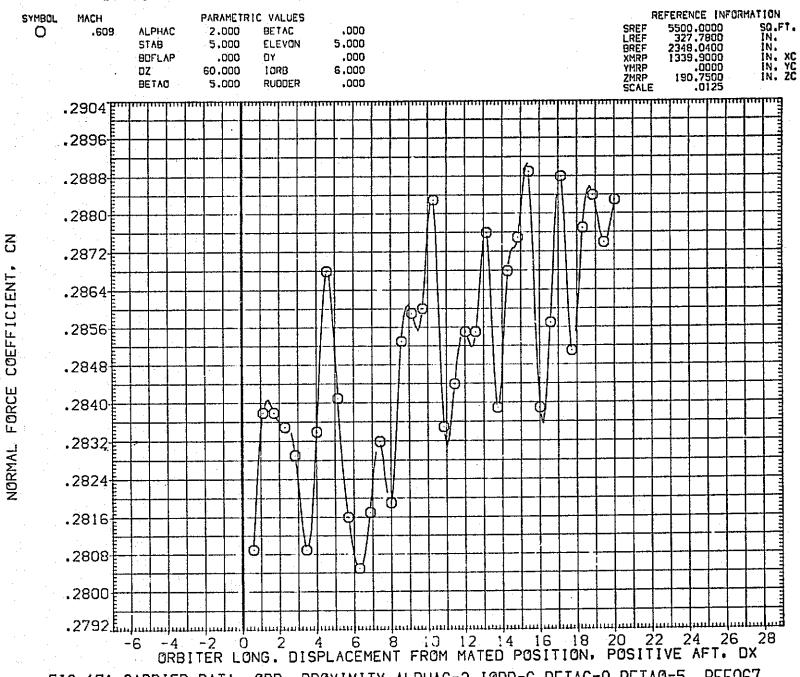


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67
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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE067)

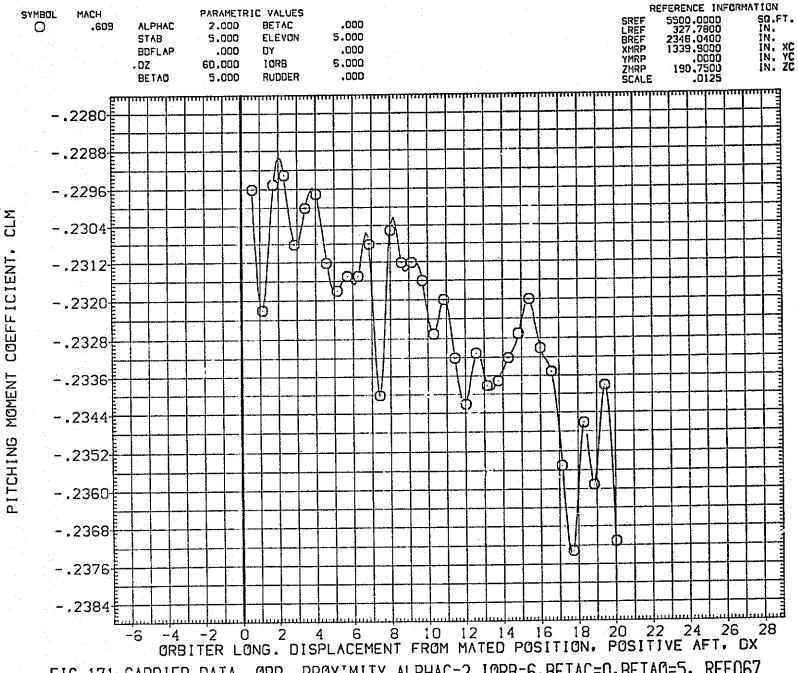


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

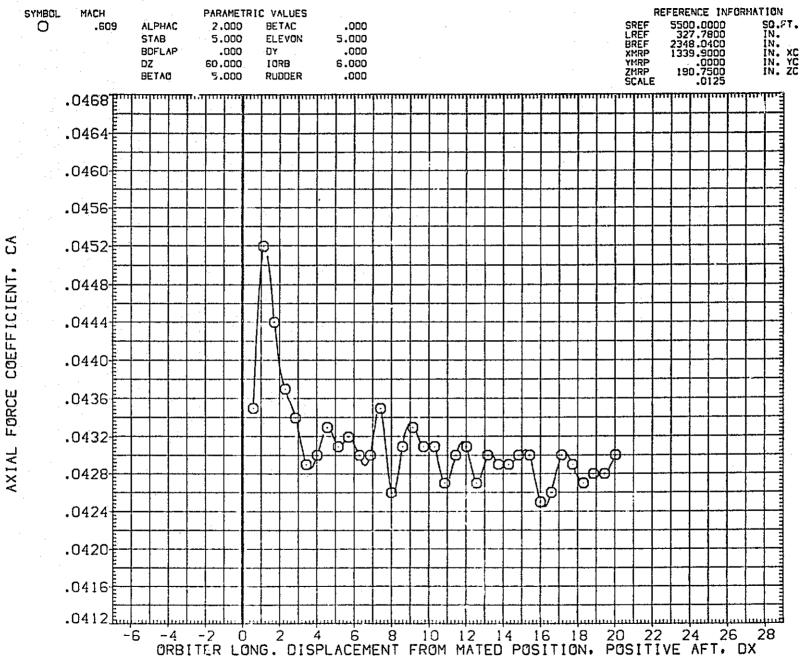


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE067)

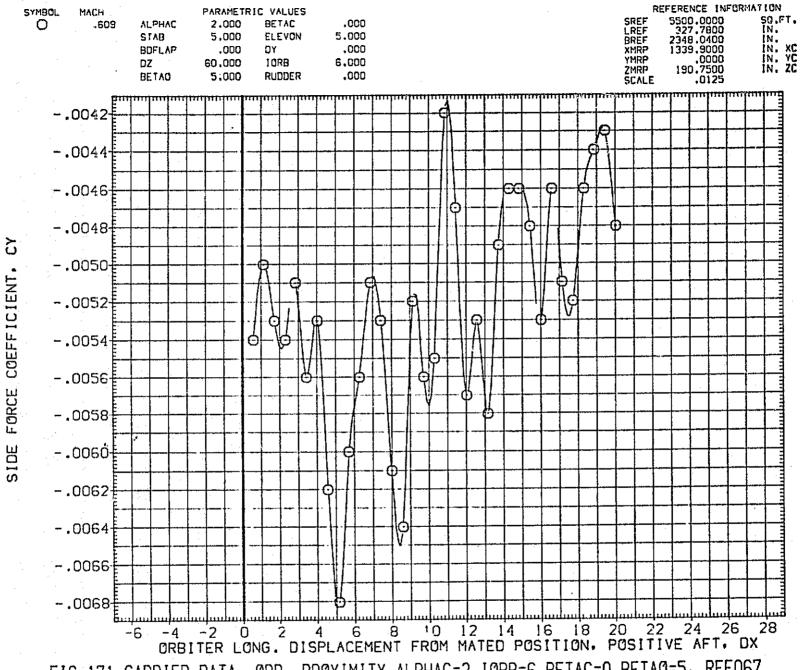


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

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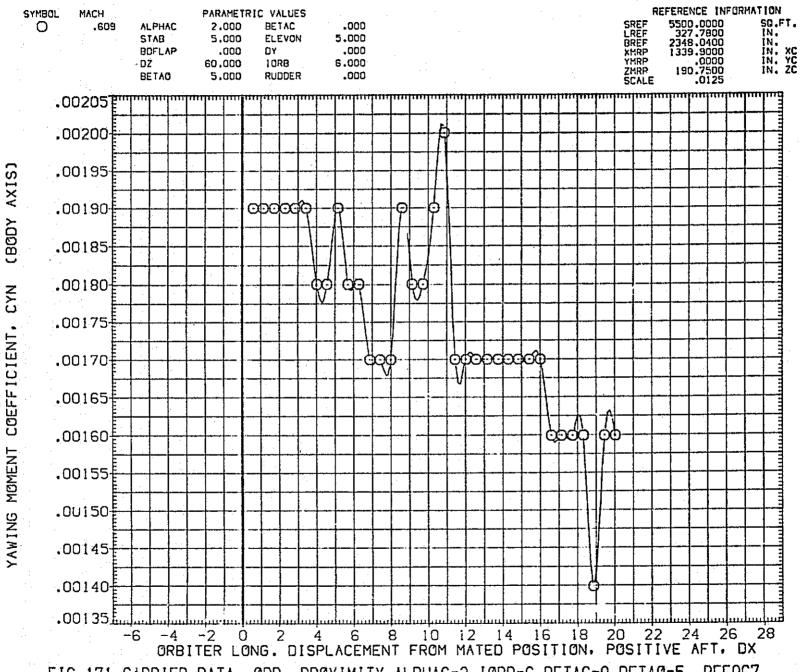


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE067)

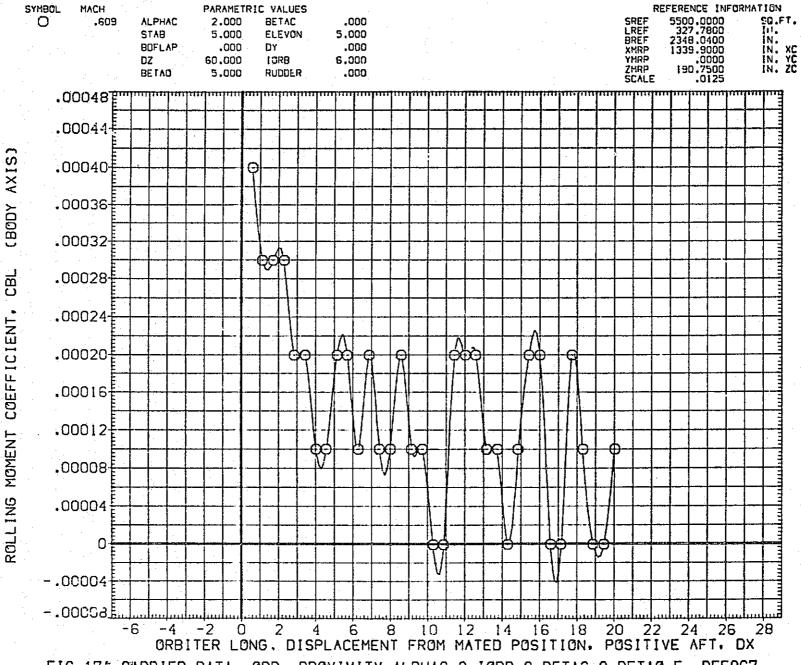


FIG.17f CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

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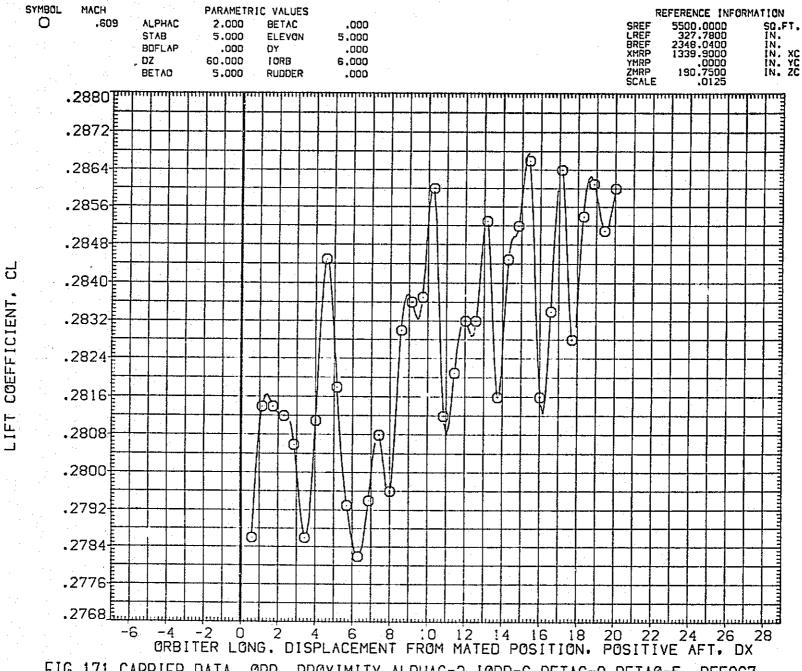


FIG.171 CARRIER DATA, ORB. PROXIMITY.ALPHAC=2, IORB=6.BETAC=0.BETAO=5, RFEO67

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE067)

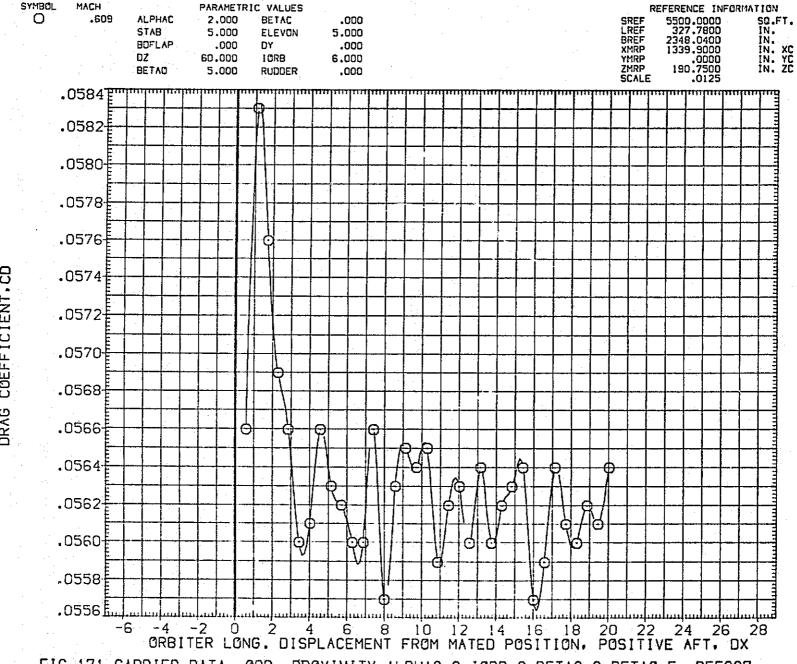


FIG.171 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=5, RFEO67

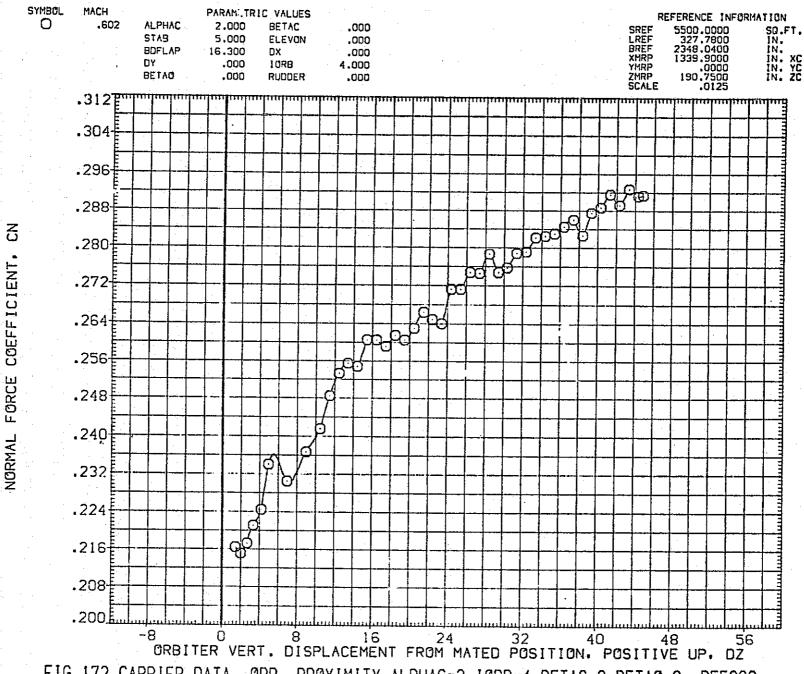


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068

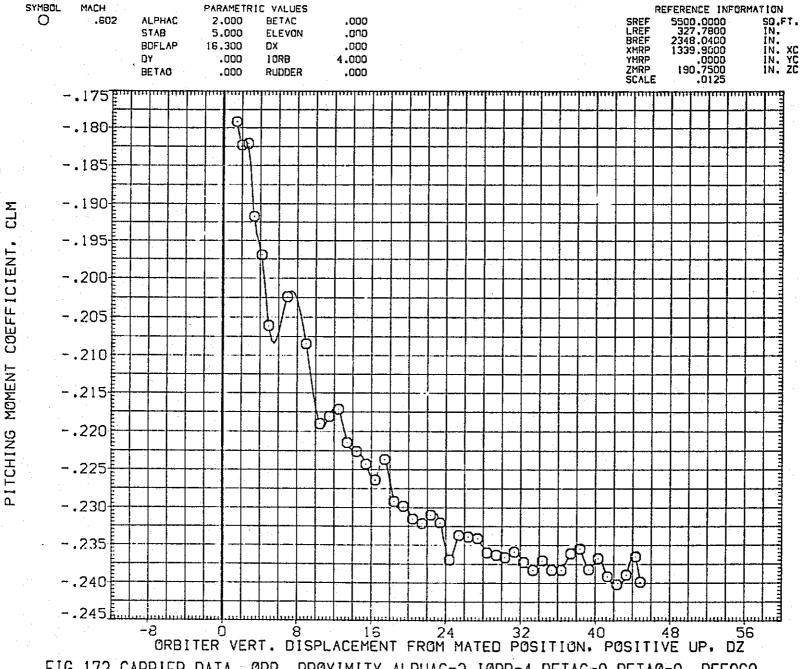


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068
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FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068

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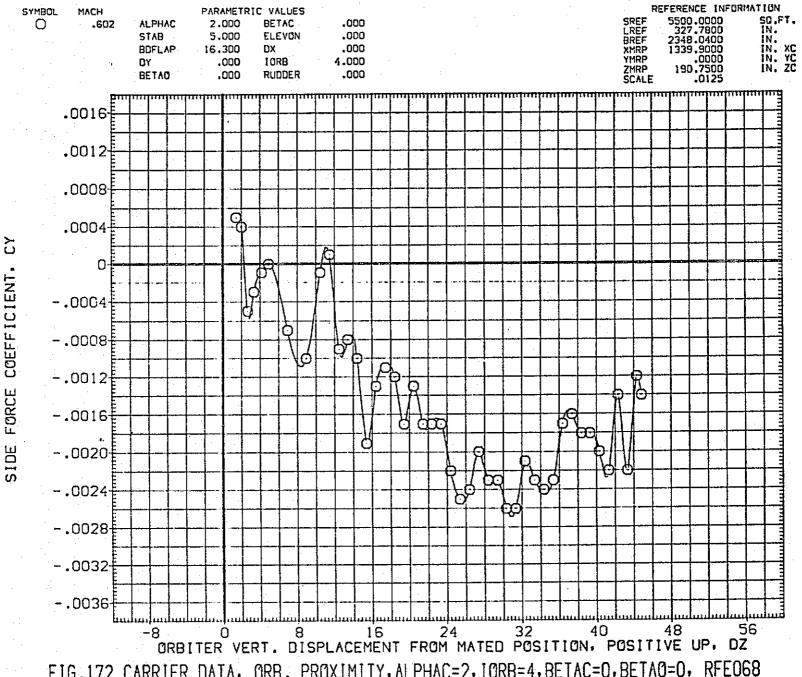


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068 PAGE 1348

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE068)

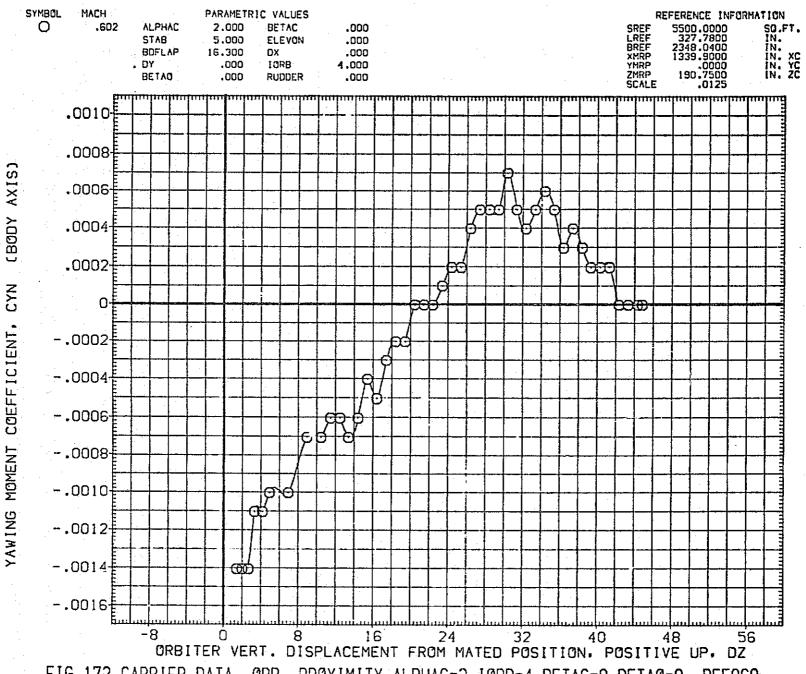


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO68

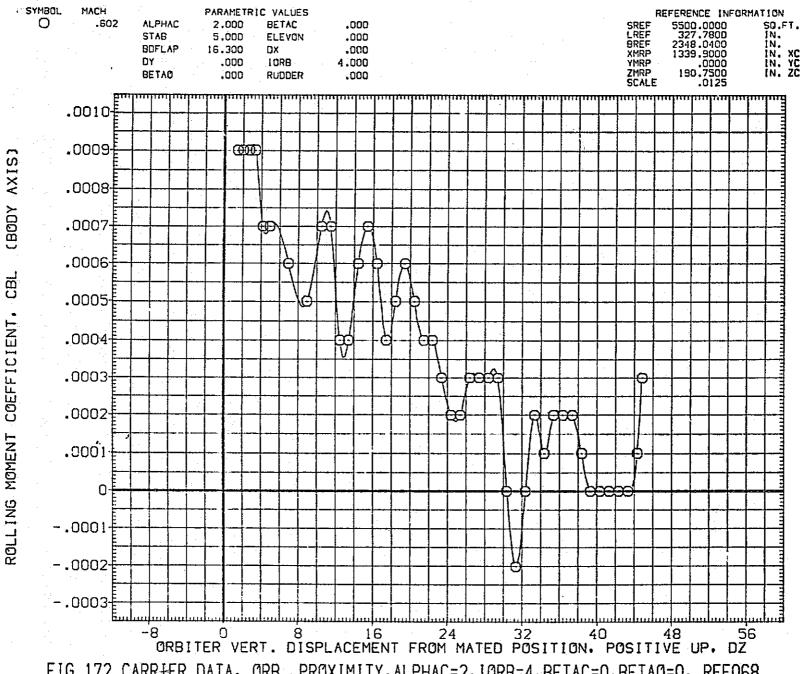


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO68
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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE068)

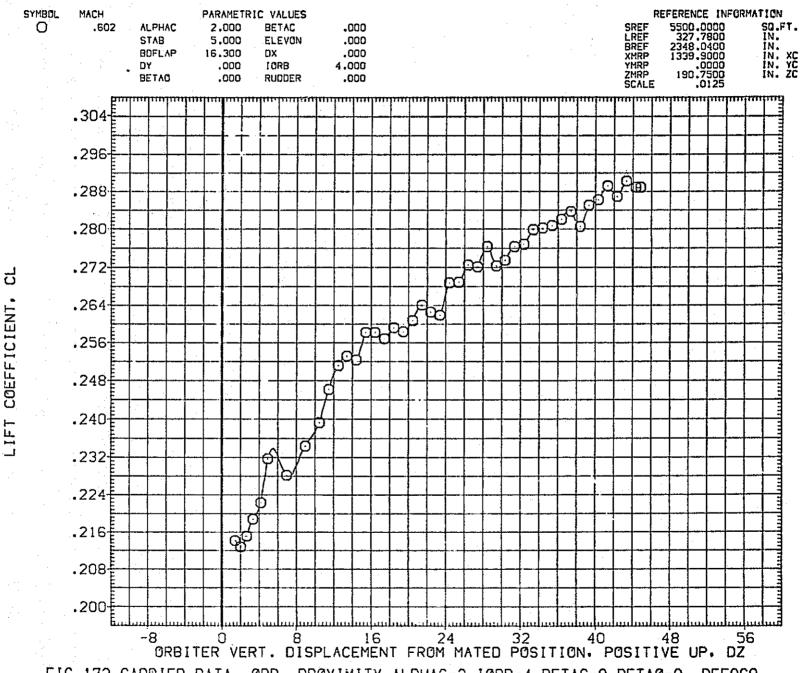


FIG.172 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE068)

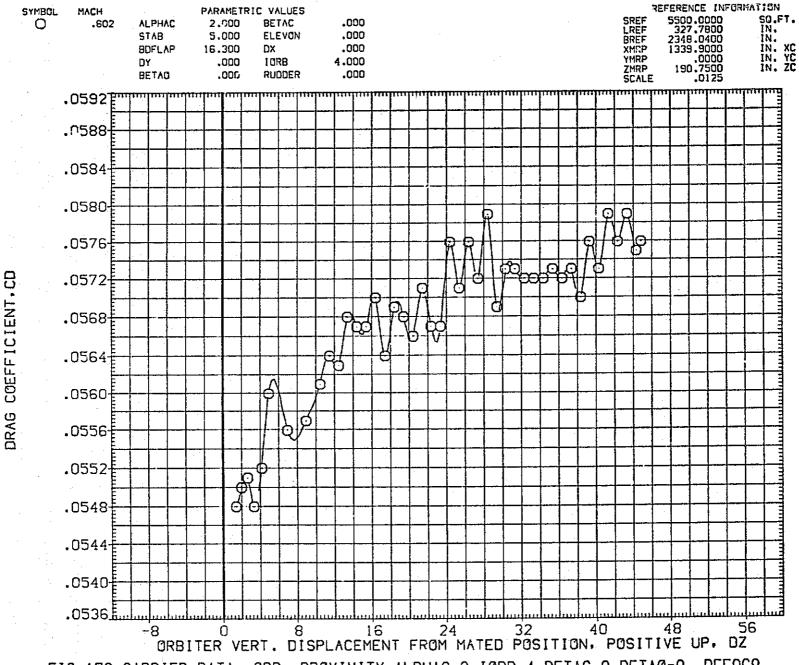


FIG.172 CARRIER DATA, ORB. FROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE068

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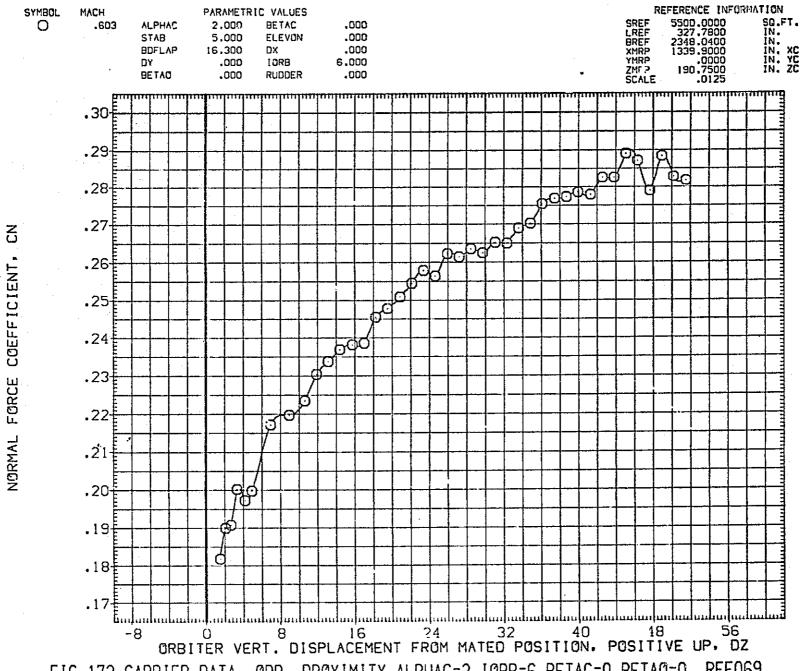


FIG.173 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAÖ=0, RFEO69

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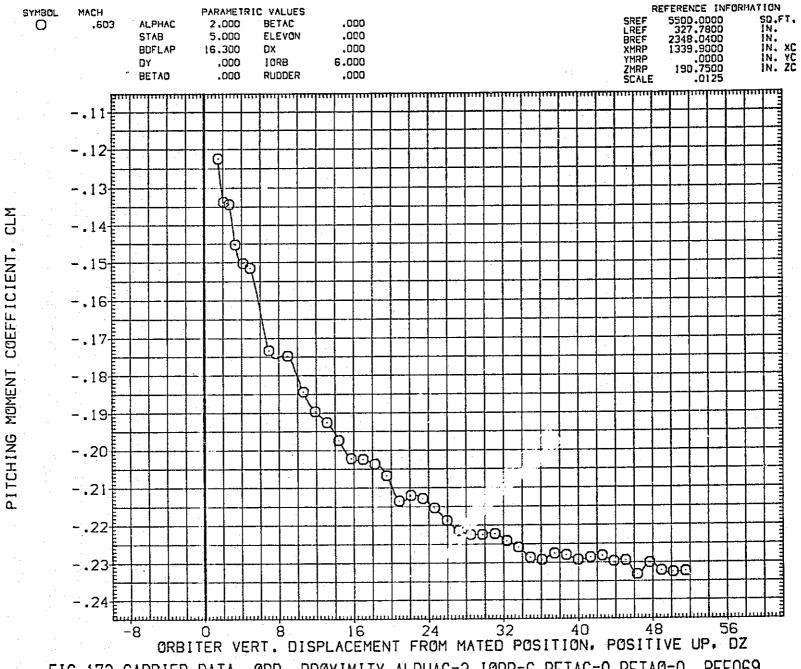


FIG.173 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE069

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE069)

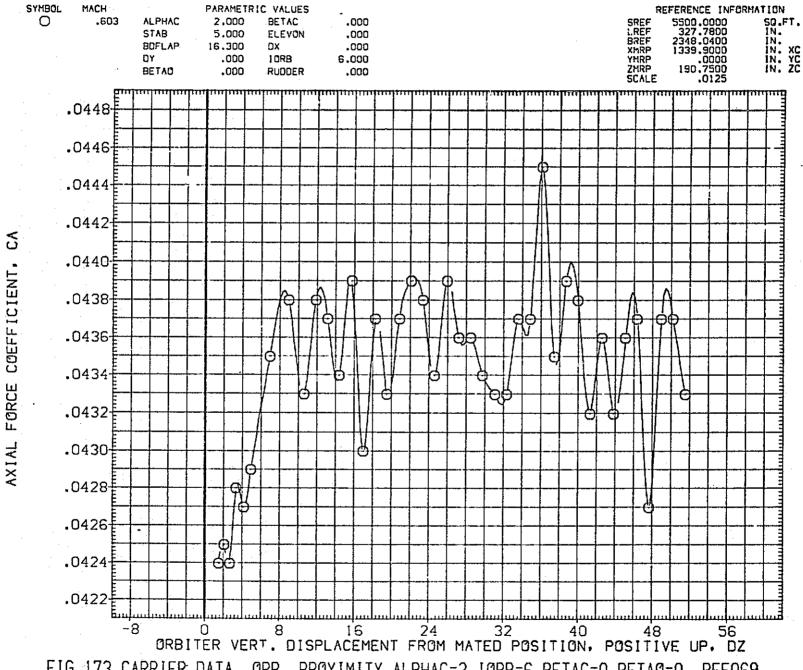


FIG.173 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO69

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE069)

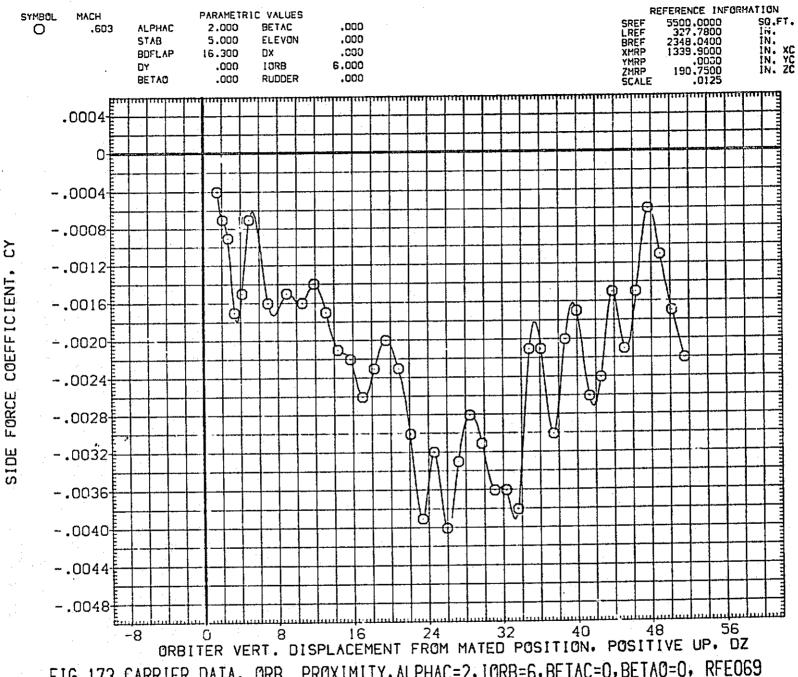
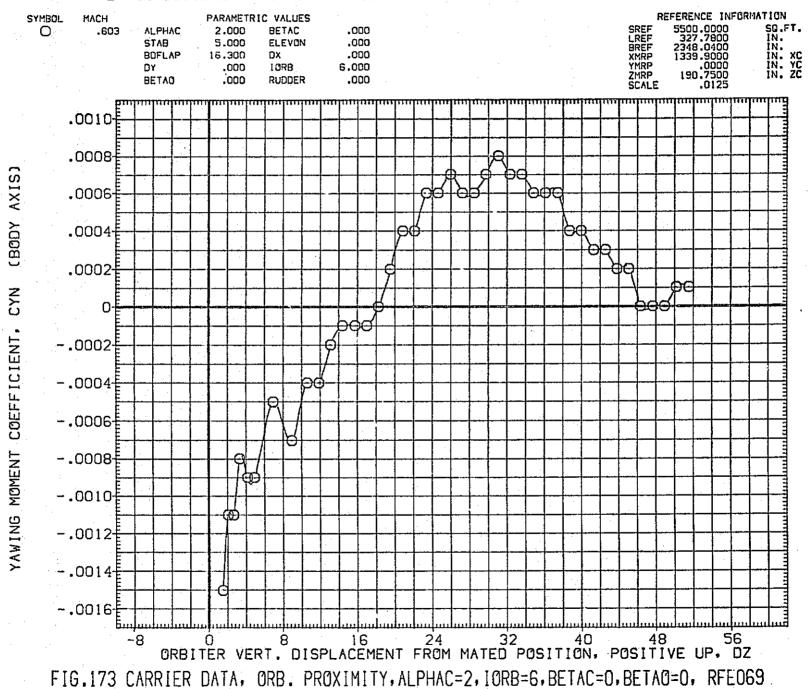


FIG.173 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO69 PAGE 1356

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE069)



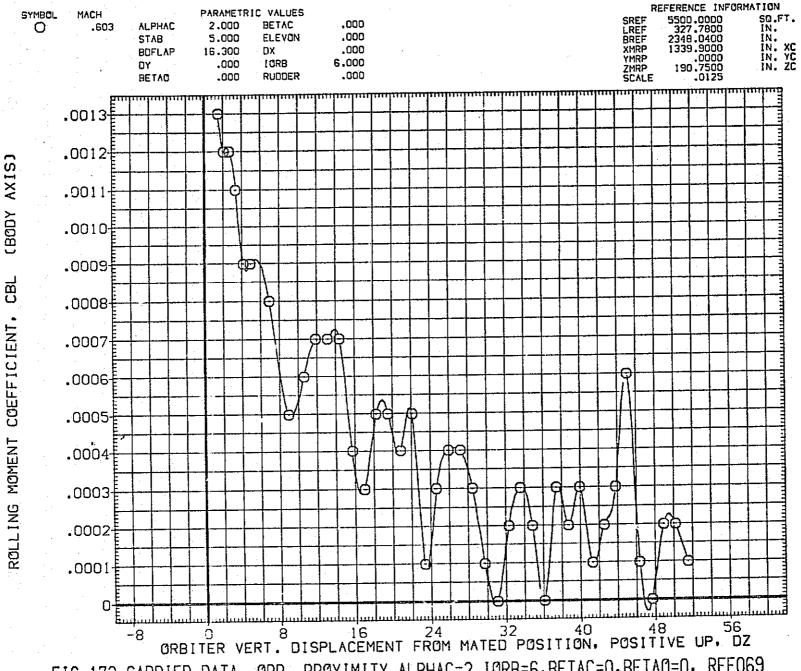
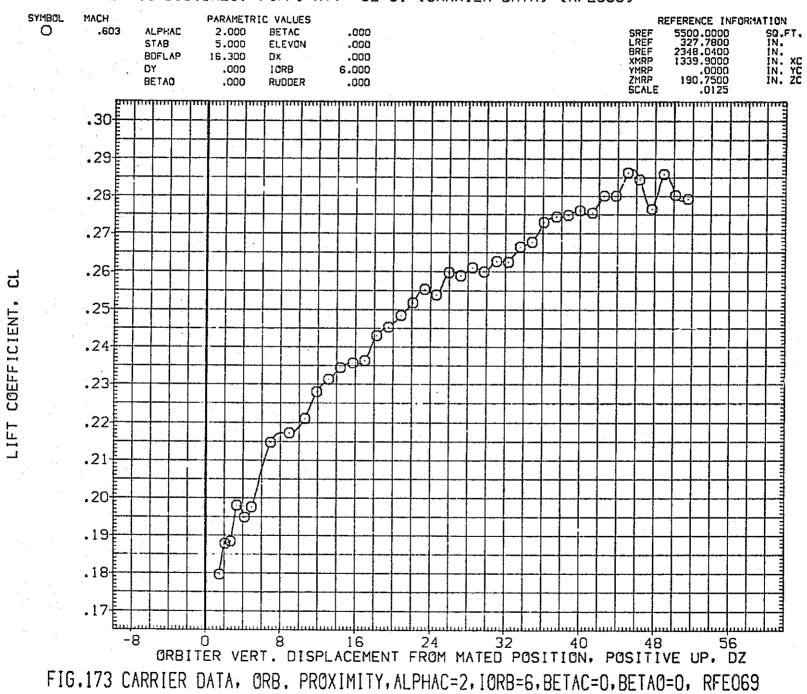


FIG.173 CARRIER DATA, ORB. PROXIMITY.ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO69 PAGE 1358



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE069)

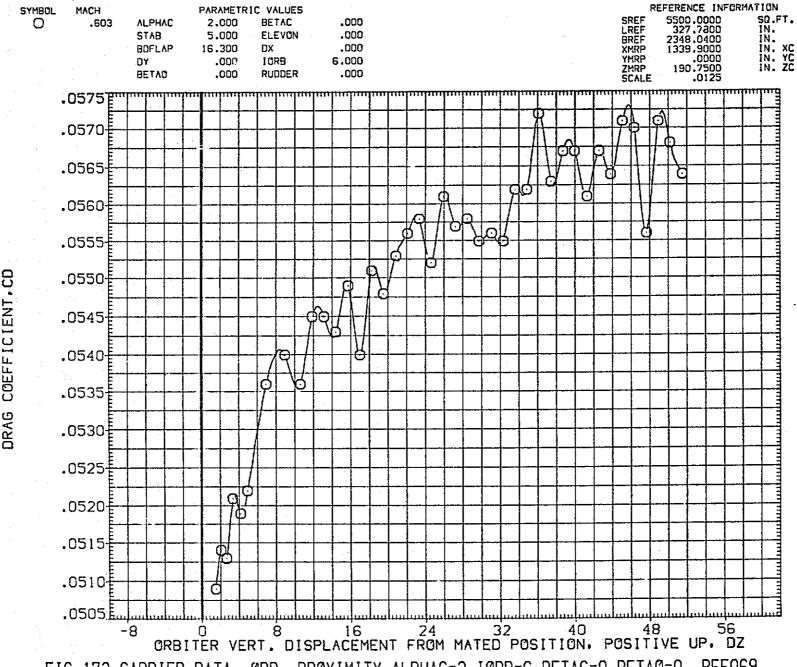


FIG.173 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO69

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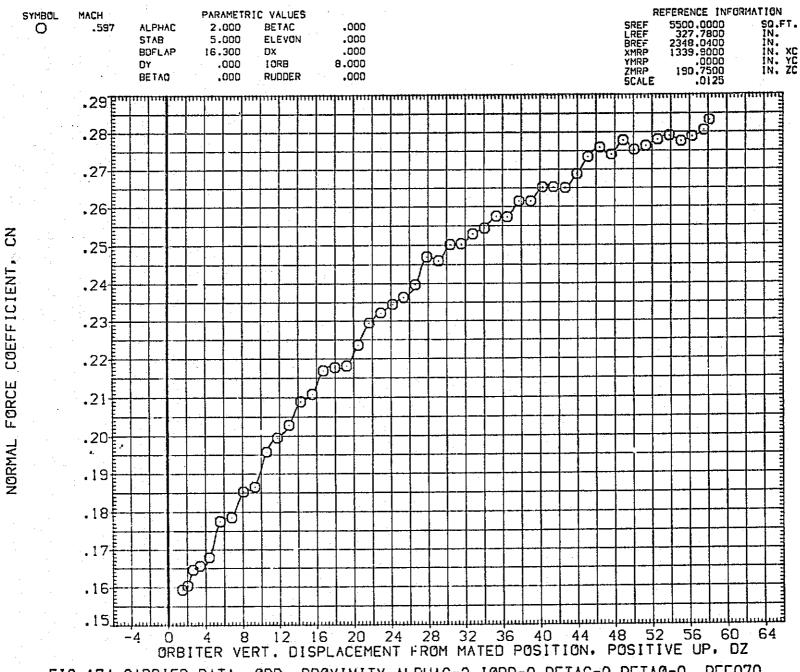


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

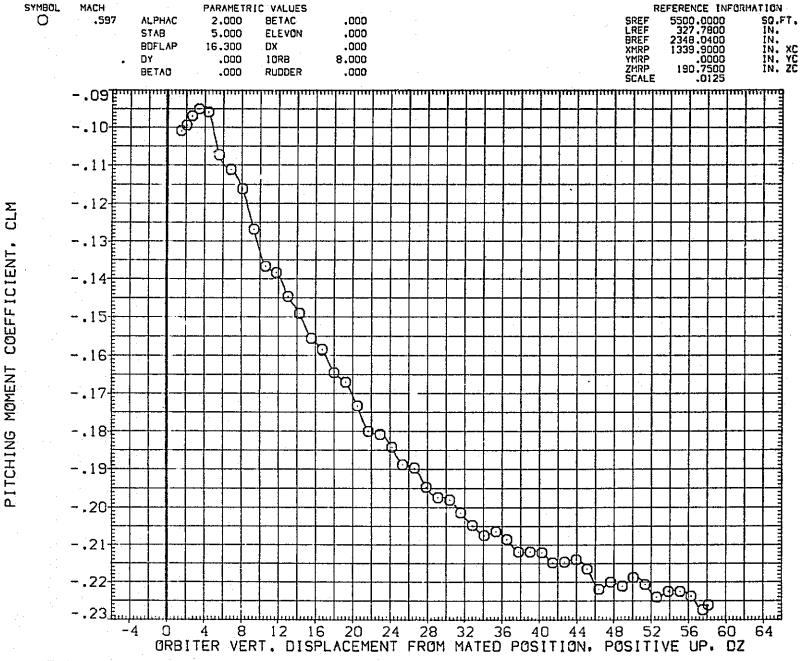


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70
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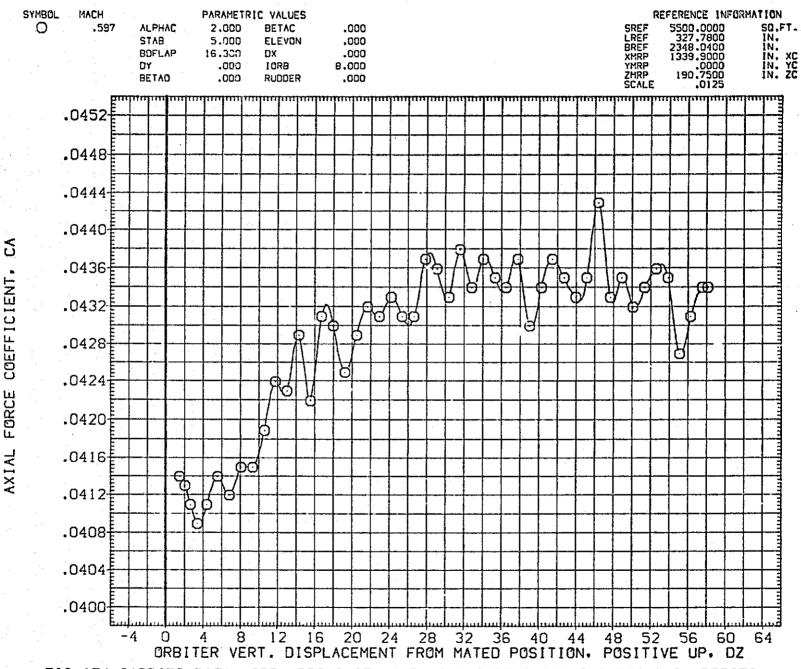


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE070)

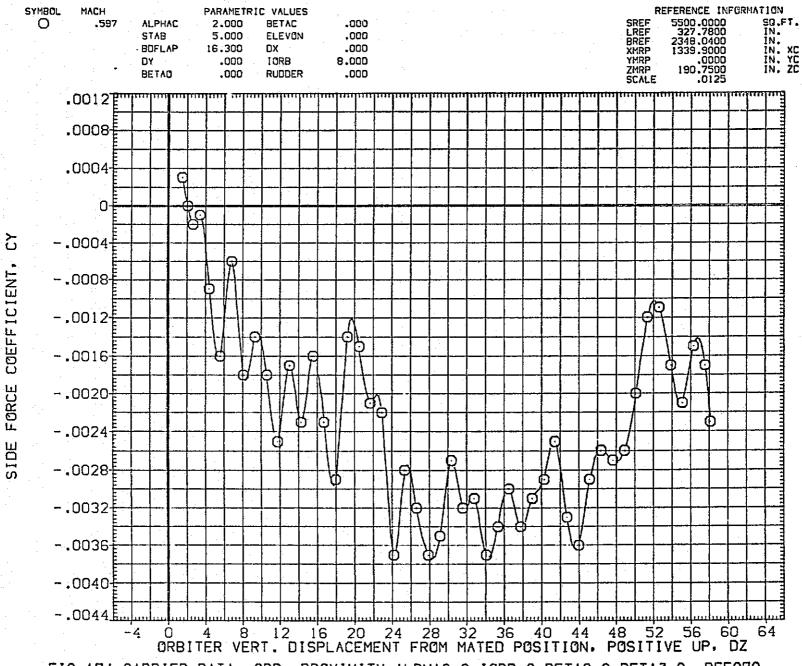


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE070)

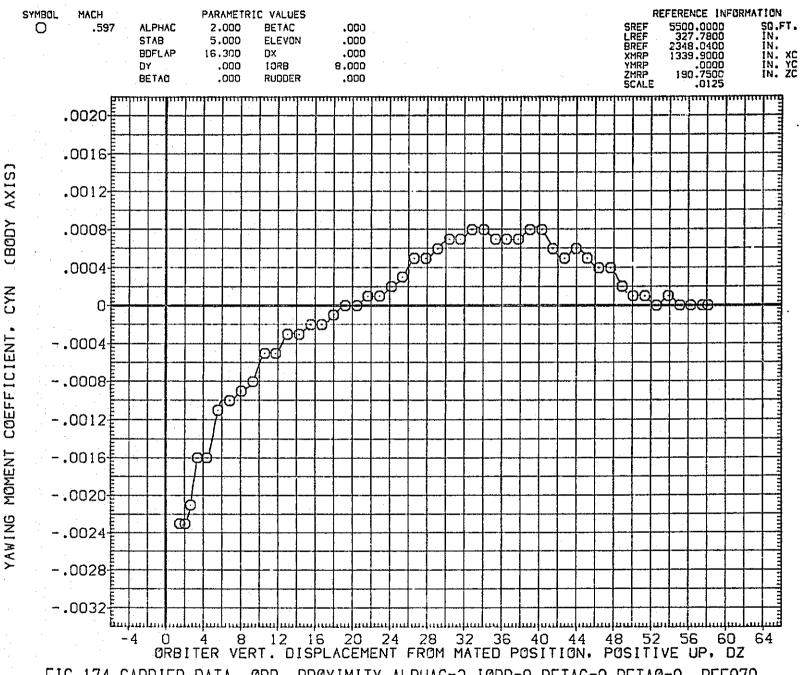


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE070)

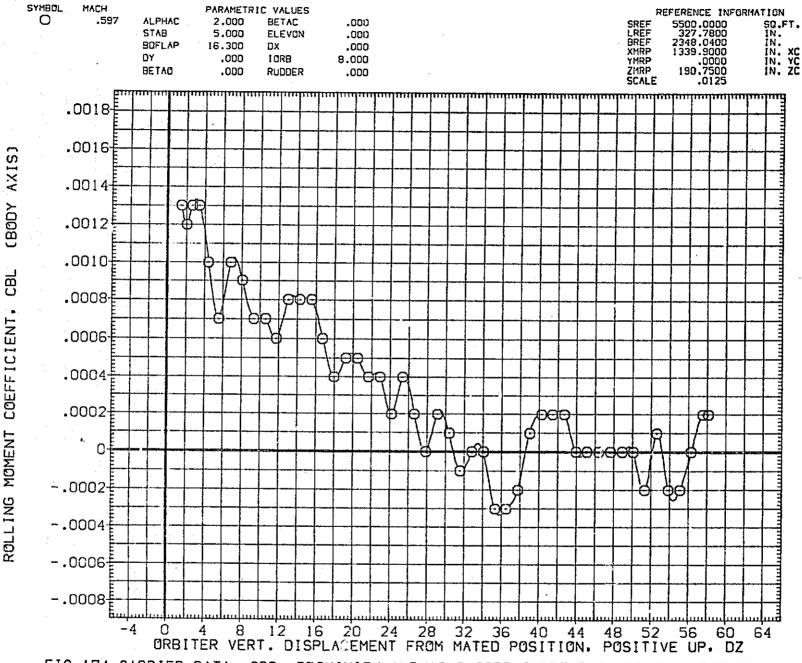
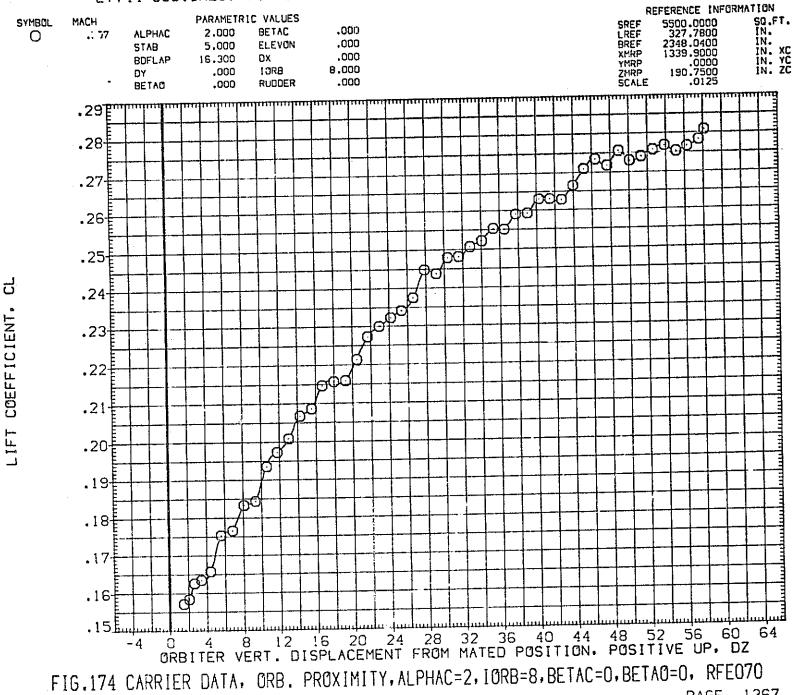


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE070)



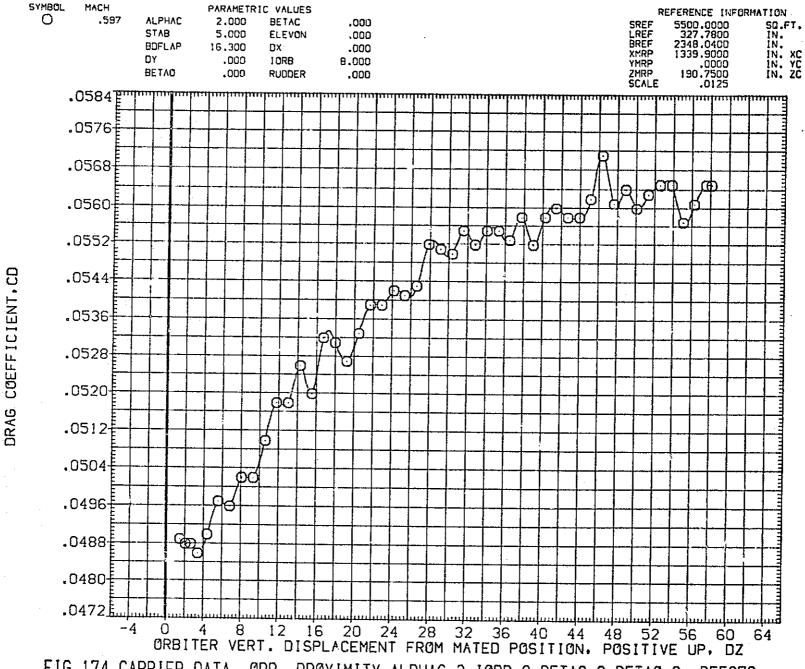


FIG.174 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO70

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE071)

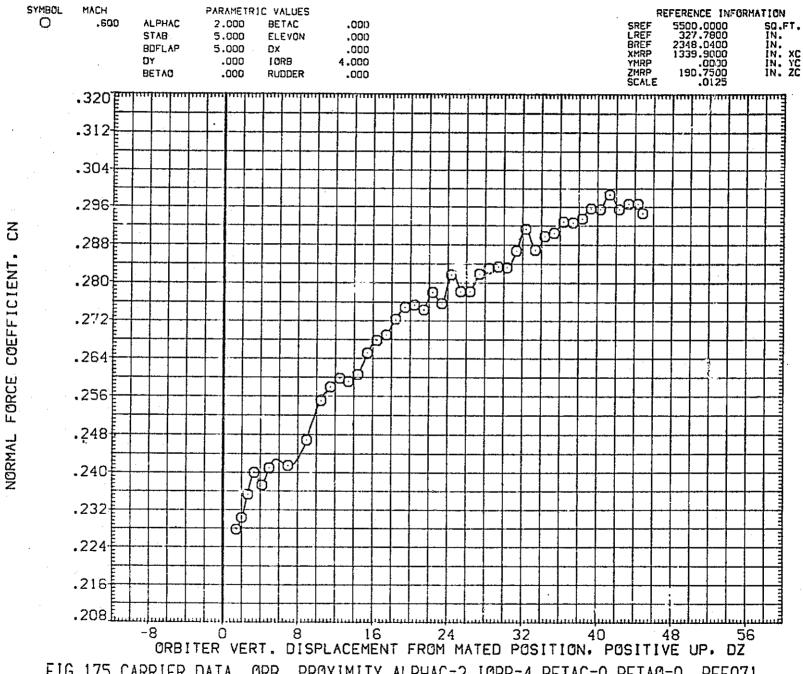


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

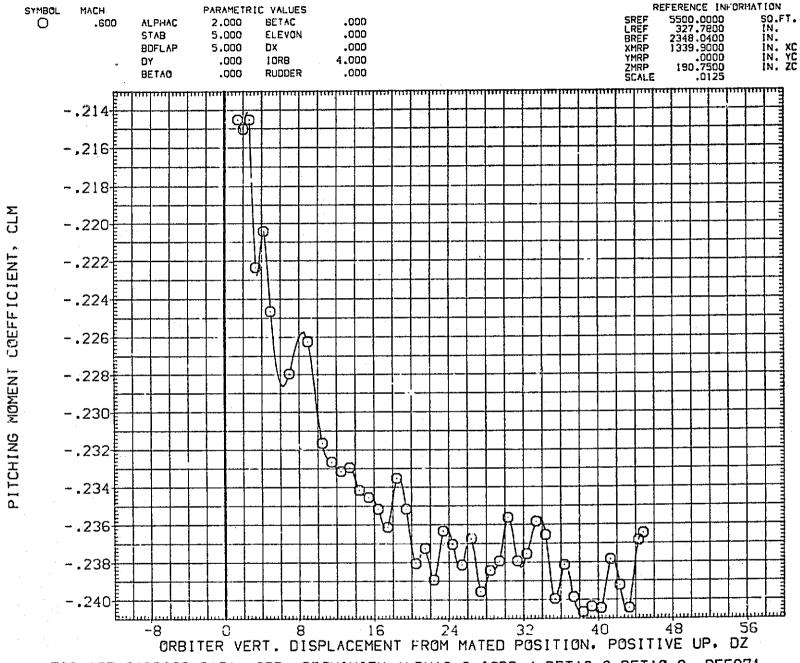


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE071)

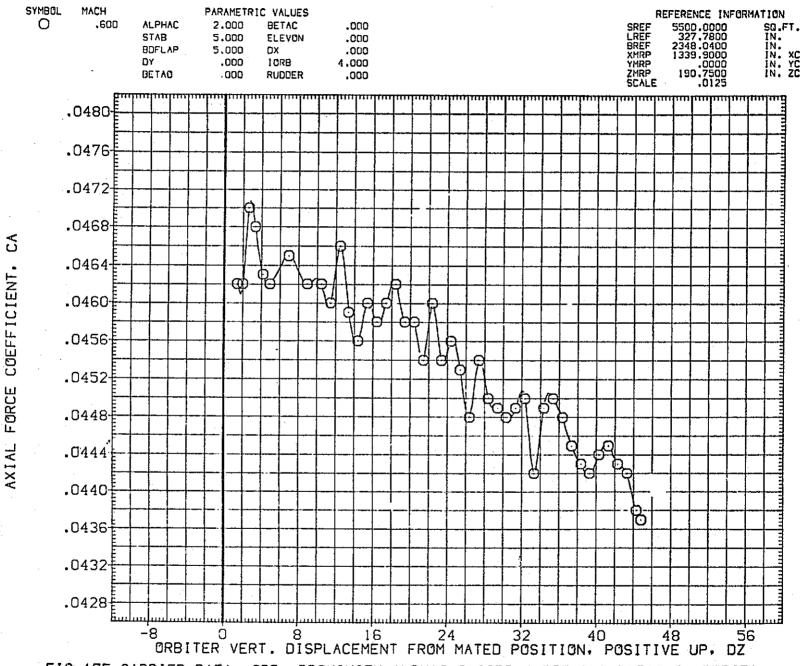


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

LTV44~559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE071)

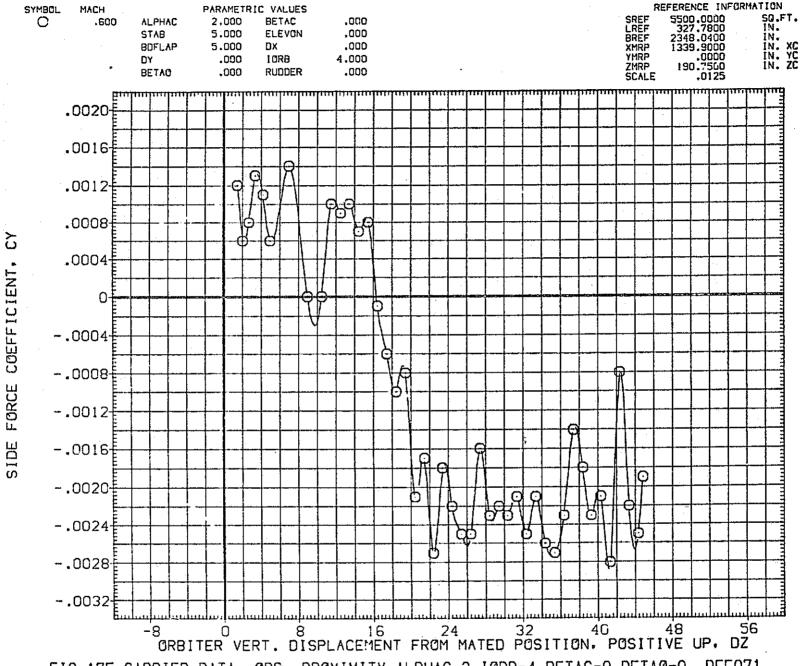
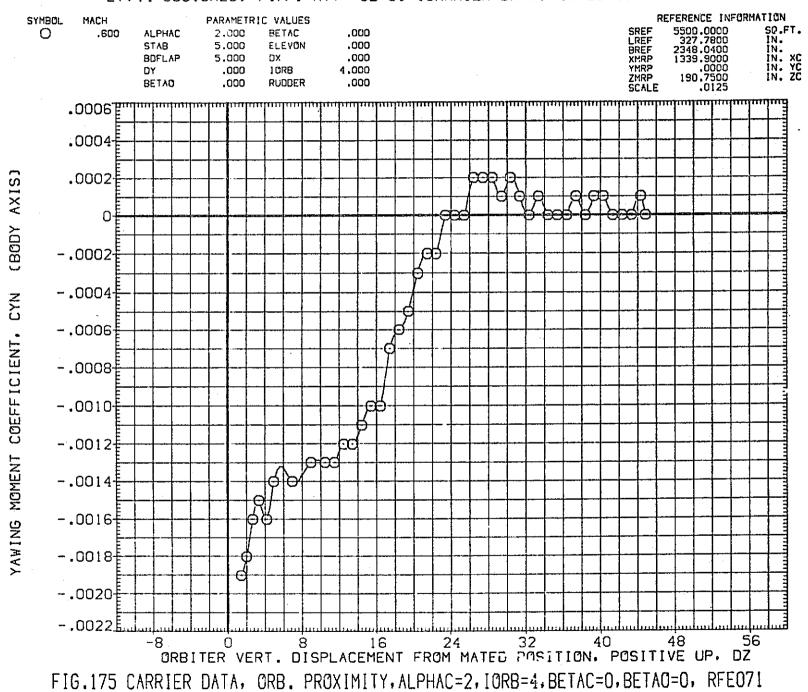


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE071)



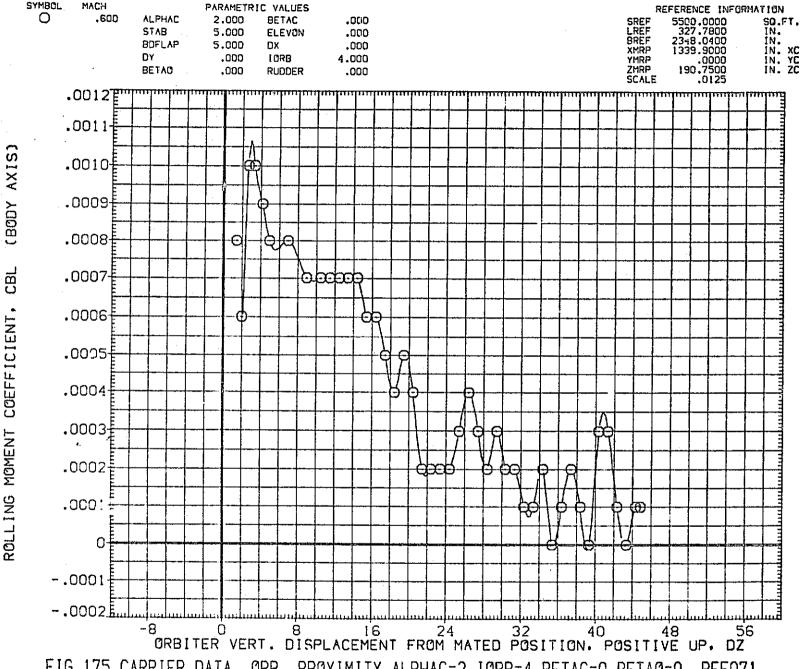


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE071)

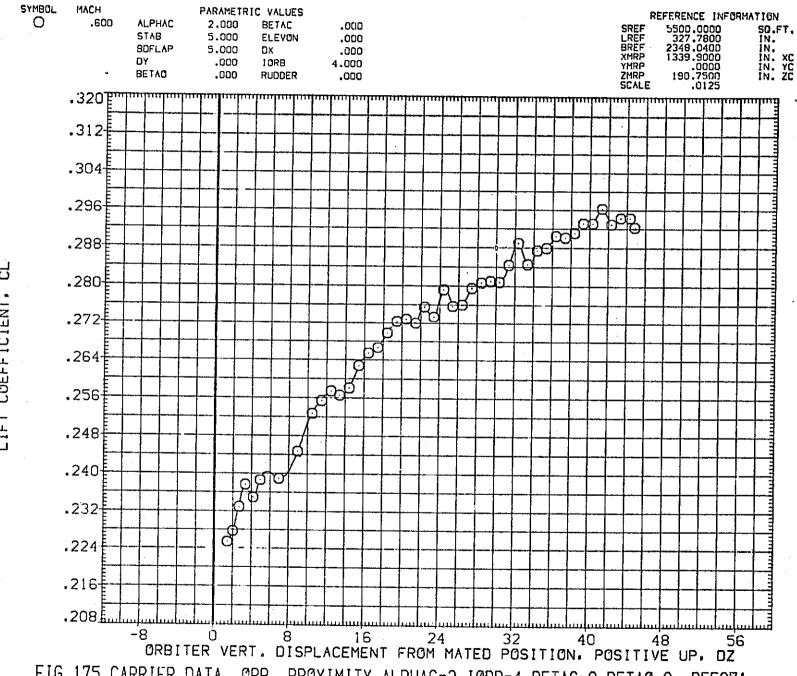


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

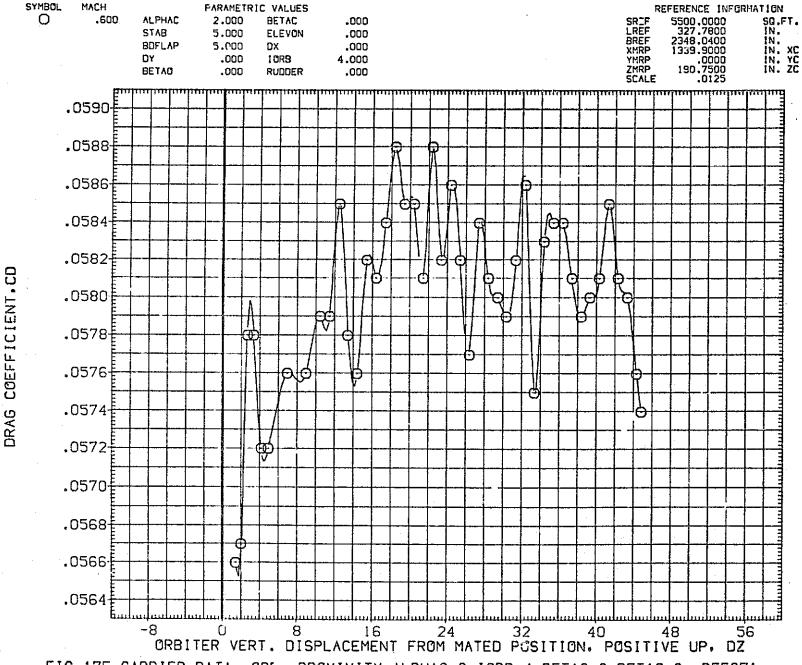


FIG.175 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO71

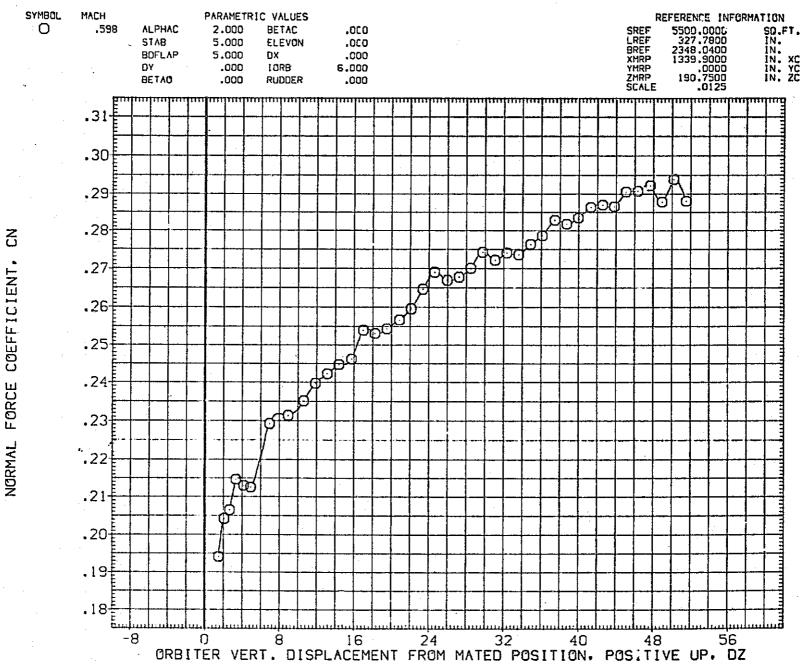


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE072)

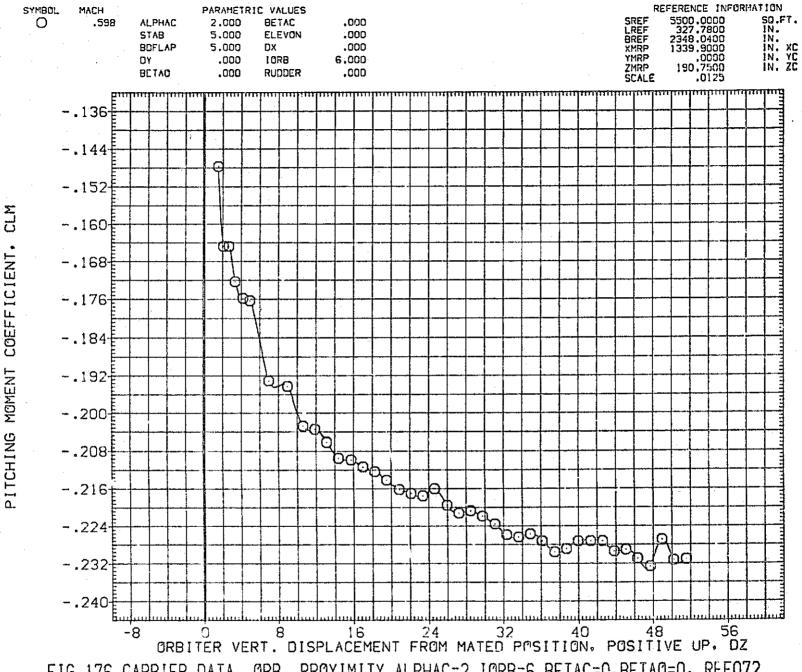
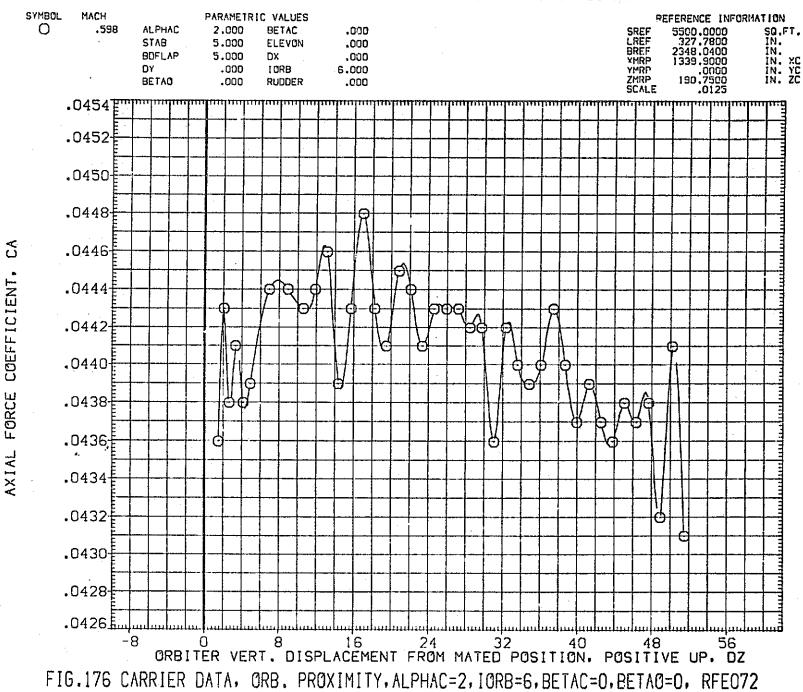


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE072)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE072)

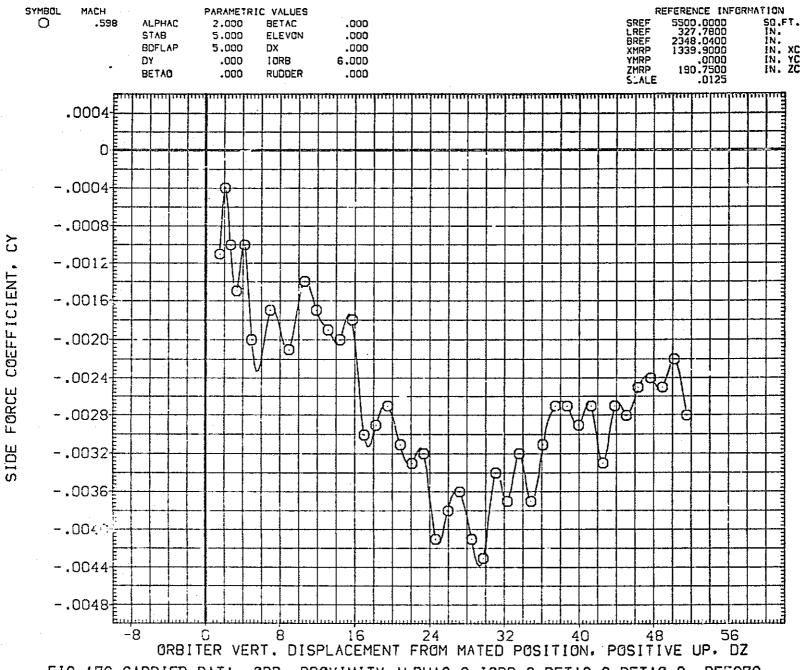


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE072)

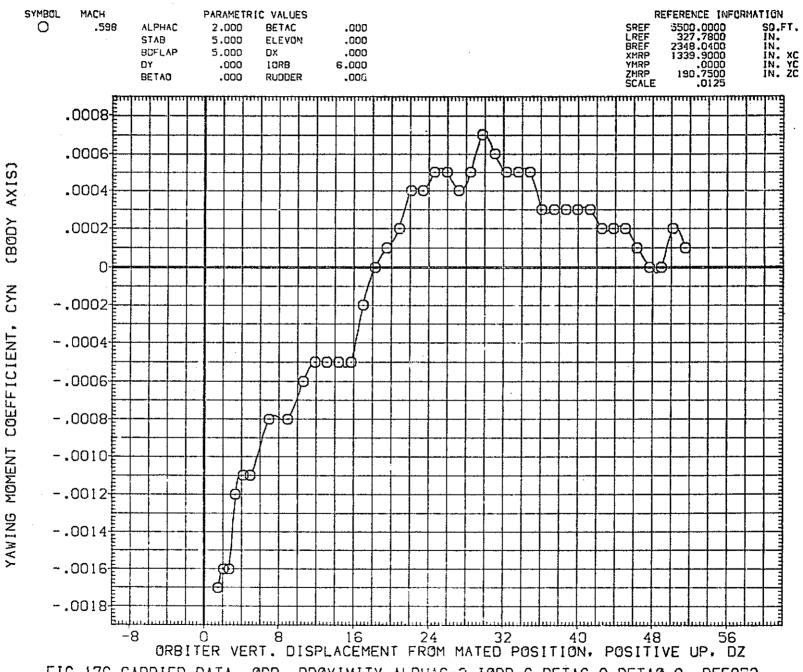
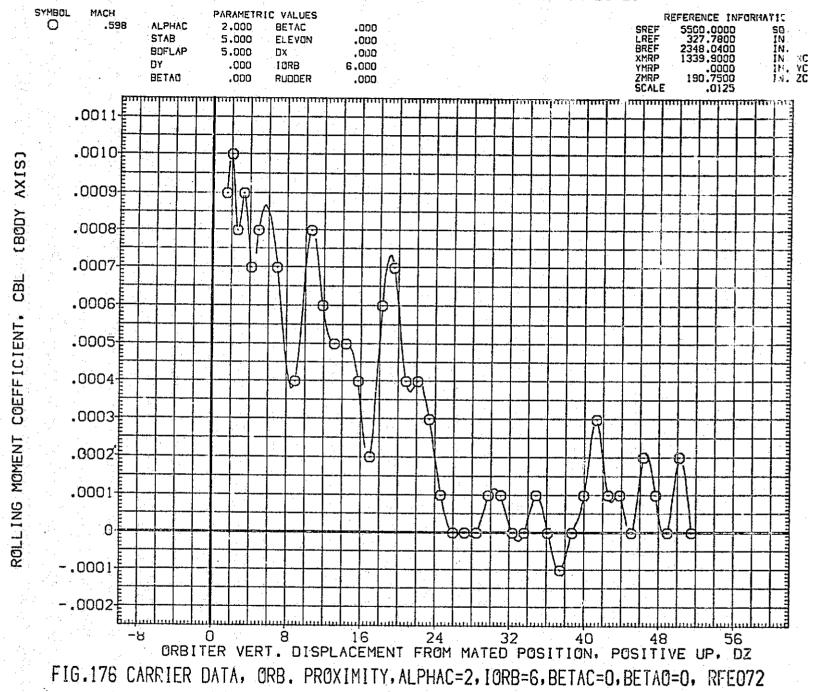


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE072)

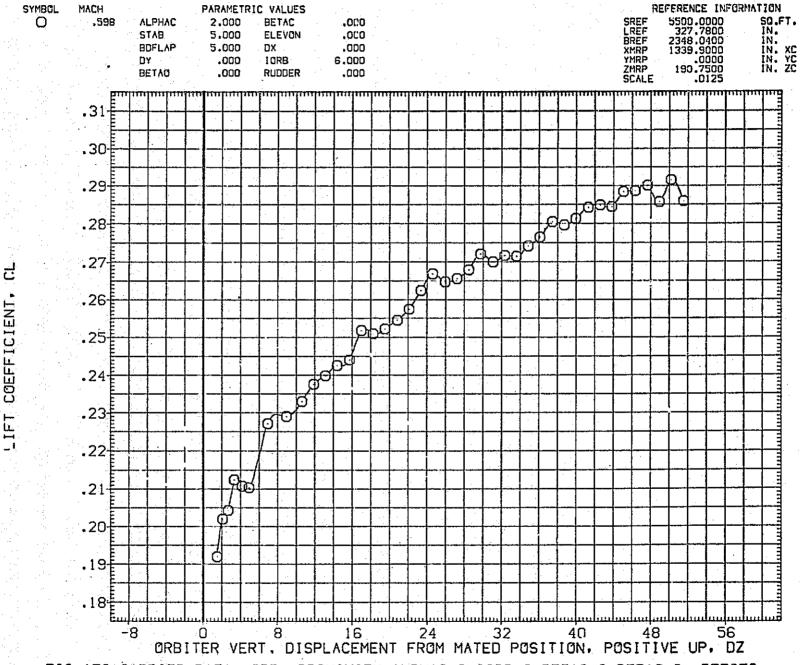


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72

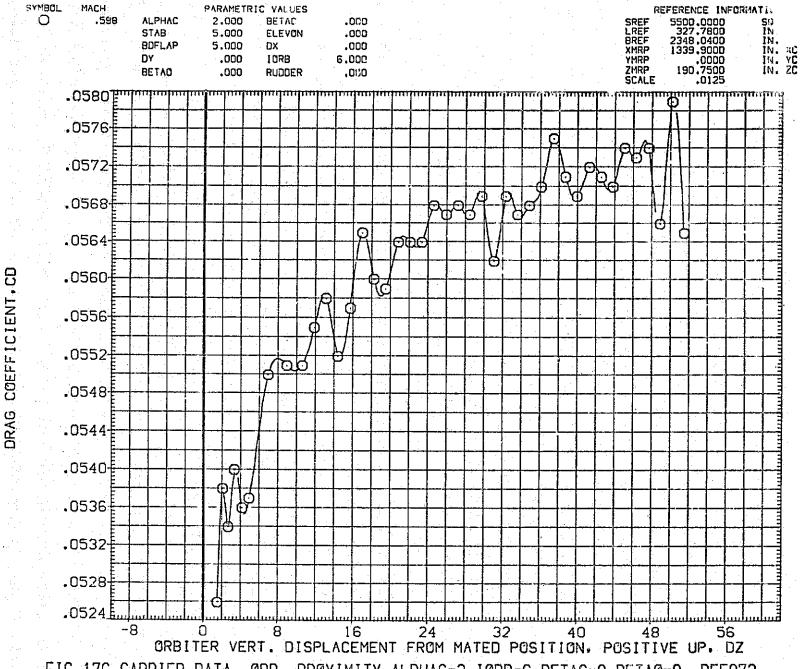


FIG.176 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO72

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE073)

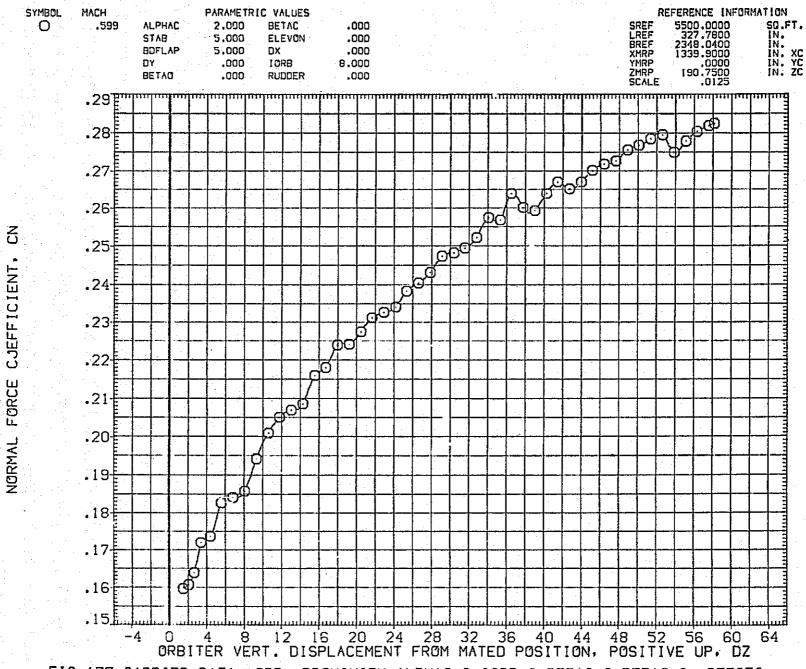


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

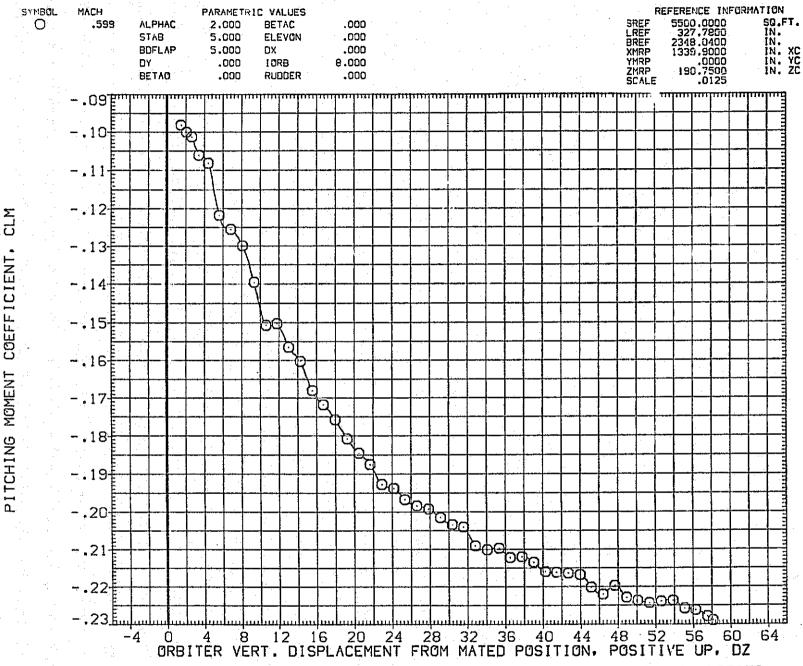


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE073)

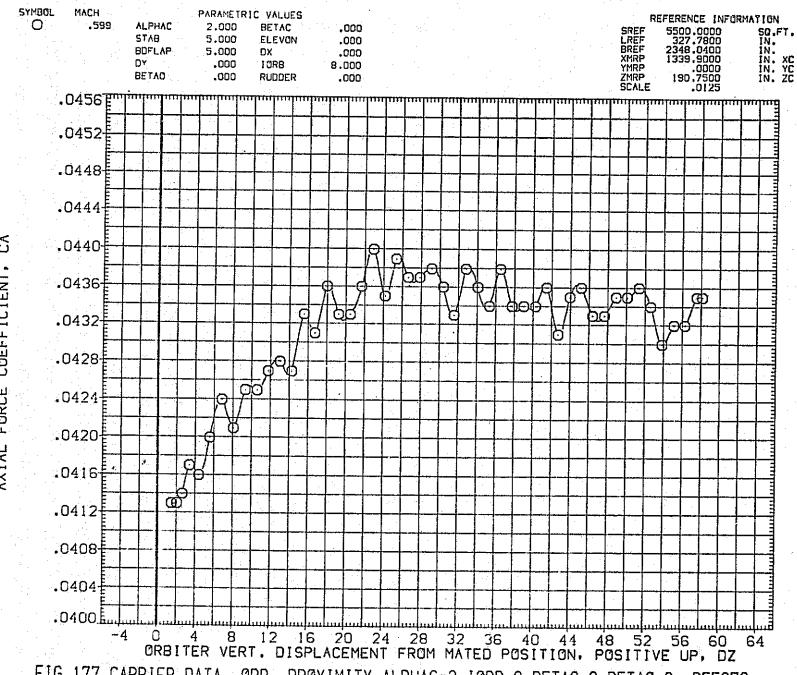


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

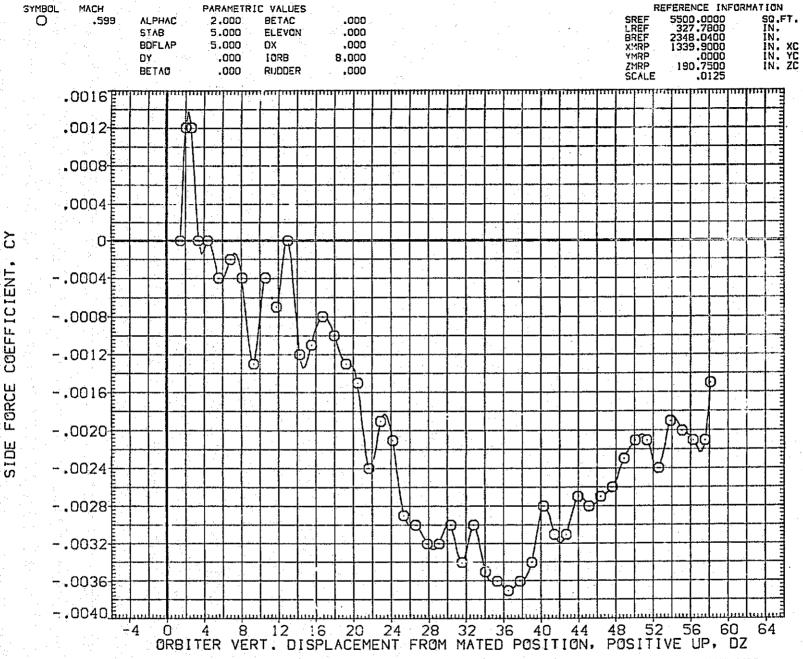


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

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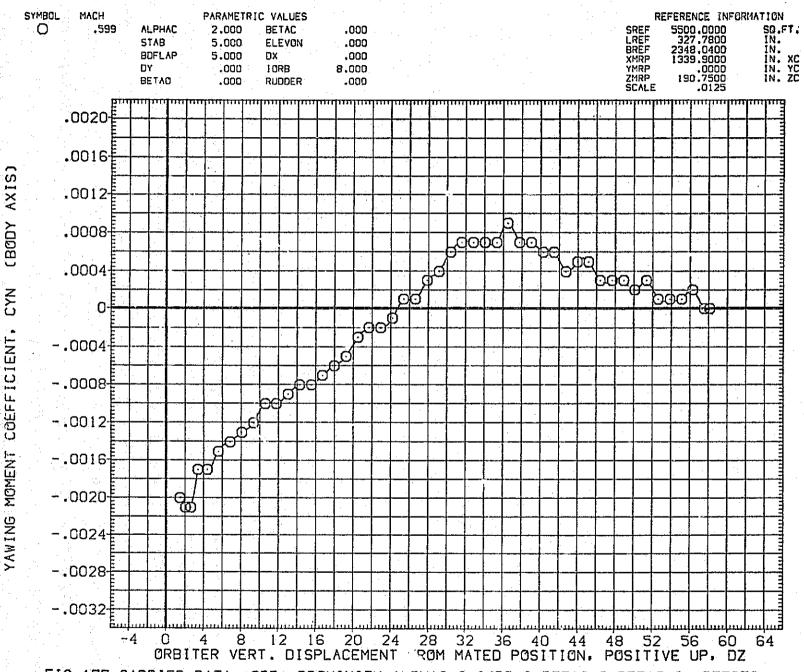


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IURB=8, BETAC=0, BETAO=0, RFEO73

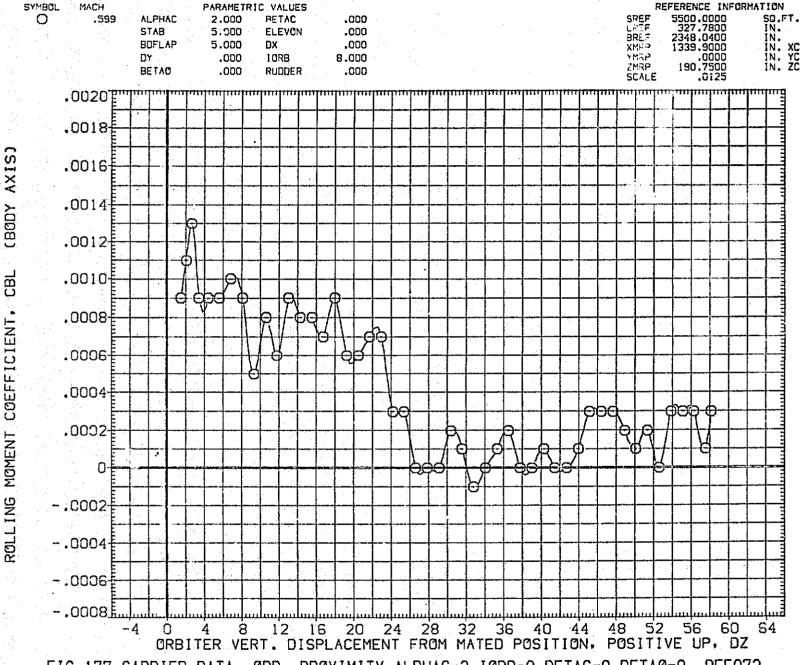


FIG.177 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

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FIG.177 CARRIER DATA, ORB. PROXIMIT', ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

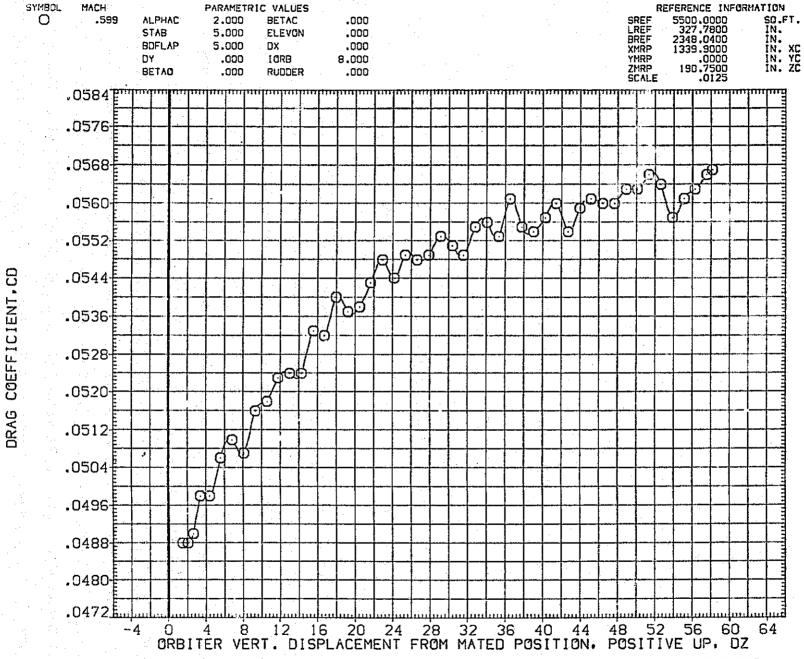
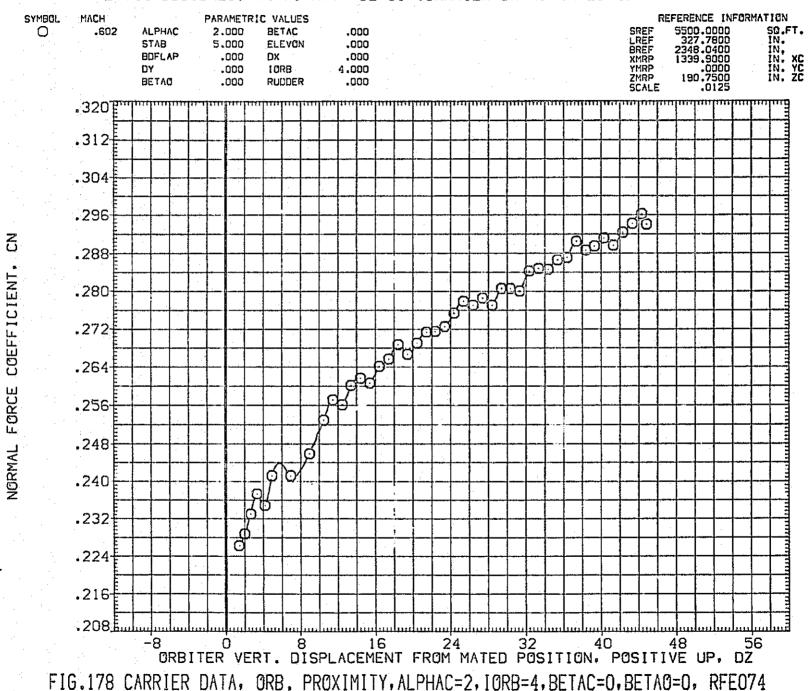


FIG.177 CARRIER DATA, ORB. PROXIMITY.ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO73

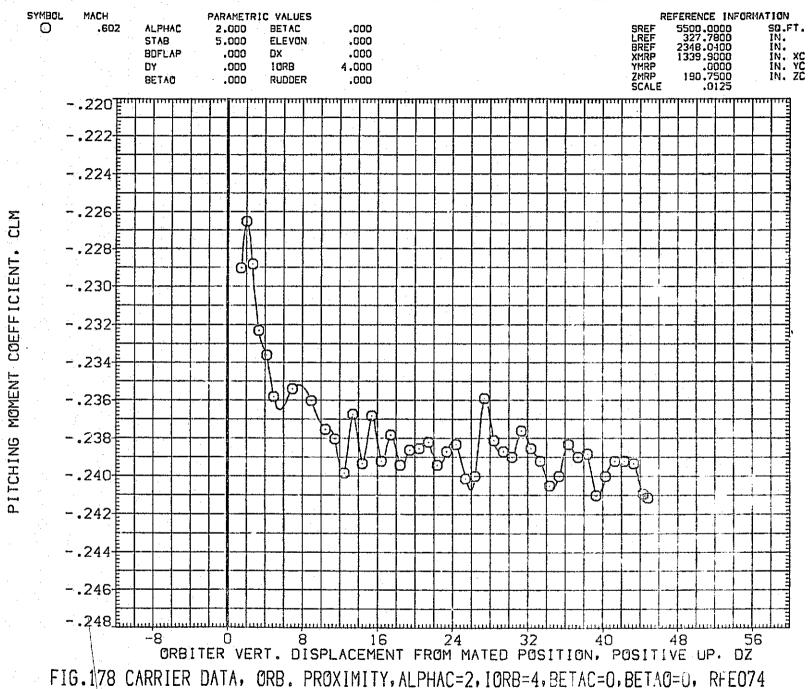
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE074)

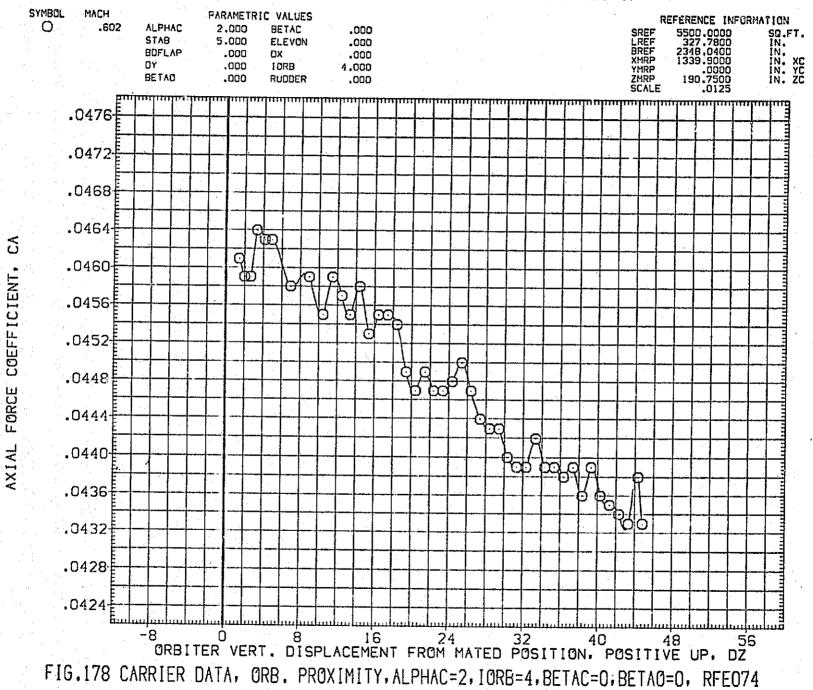


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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE074)



LTV44-559(CA26) 747/1 ATY 02 S! (CARRIER DATA) (RFE074)



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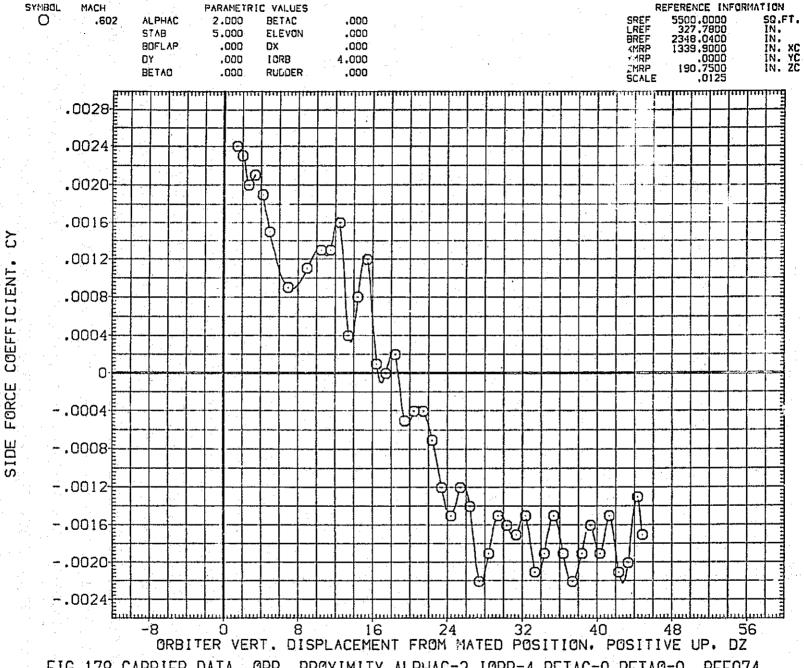


FIG.178 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO74

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## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE074)

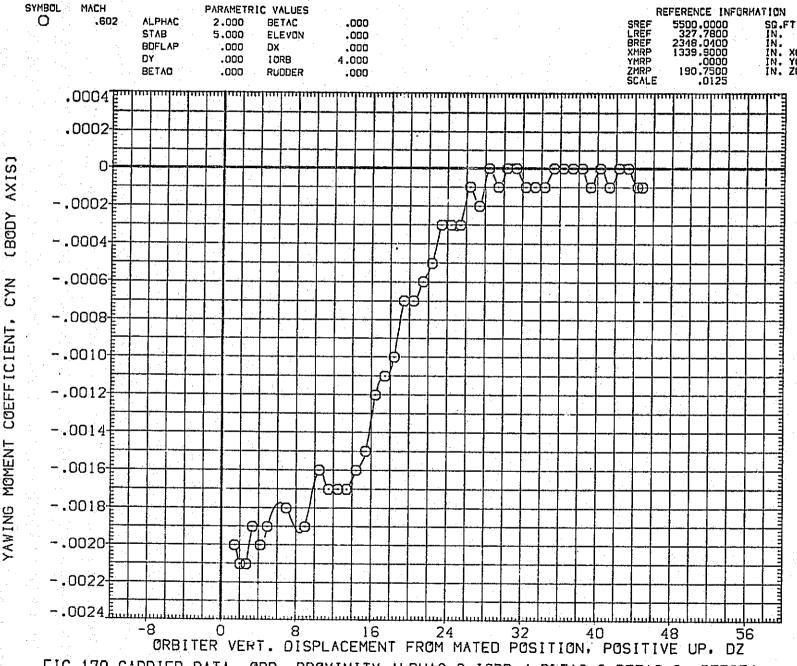


FIG.178 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO74

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE074)

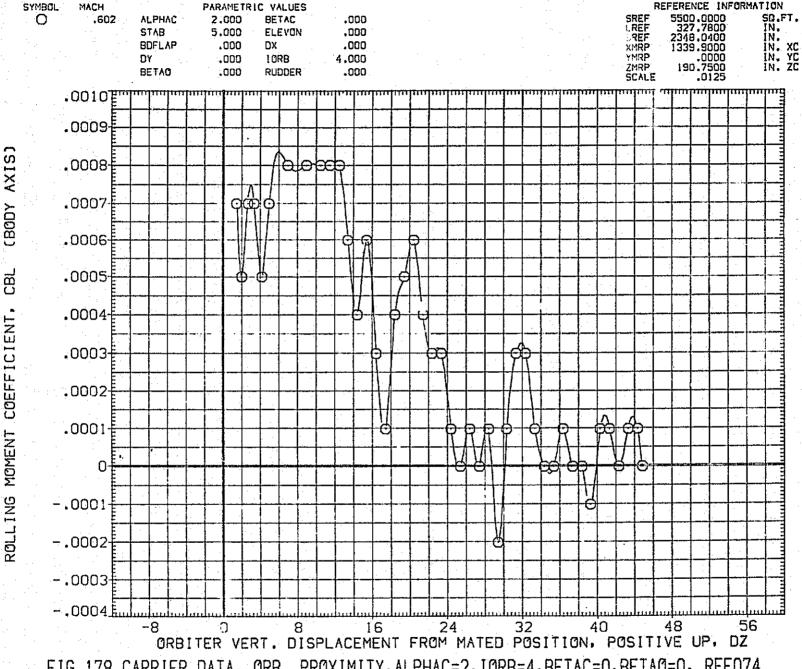
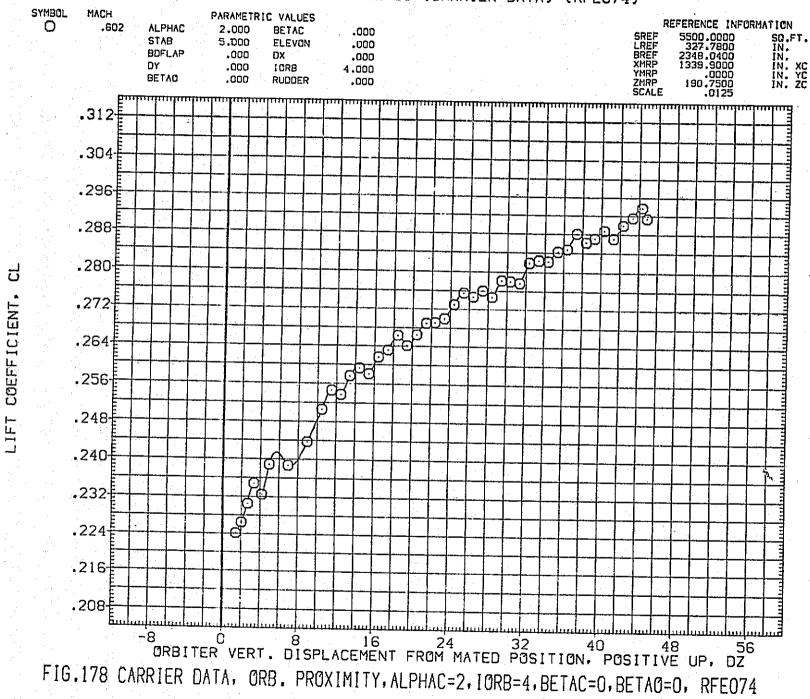


FIG.178 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO74

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE074)



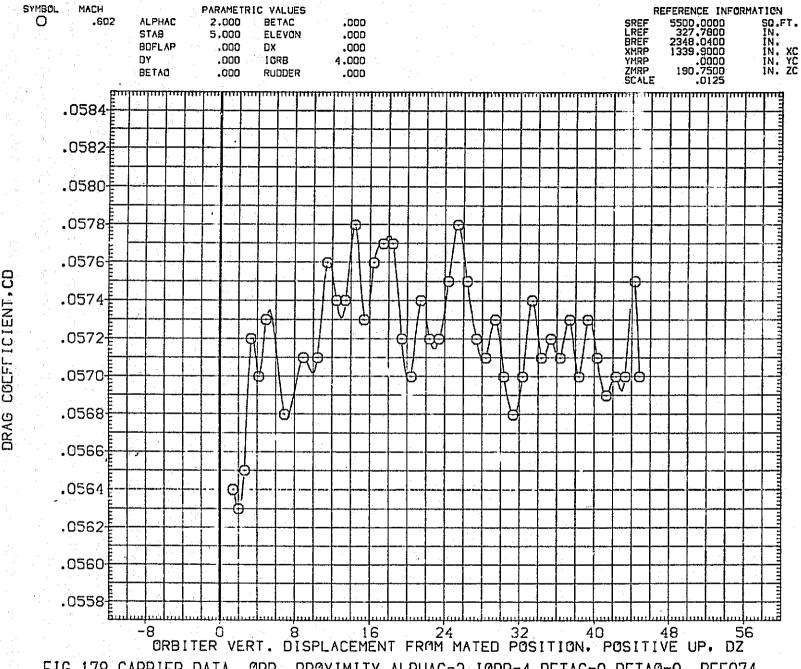


FIG.178 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFEO74

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE075)

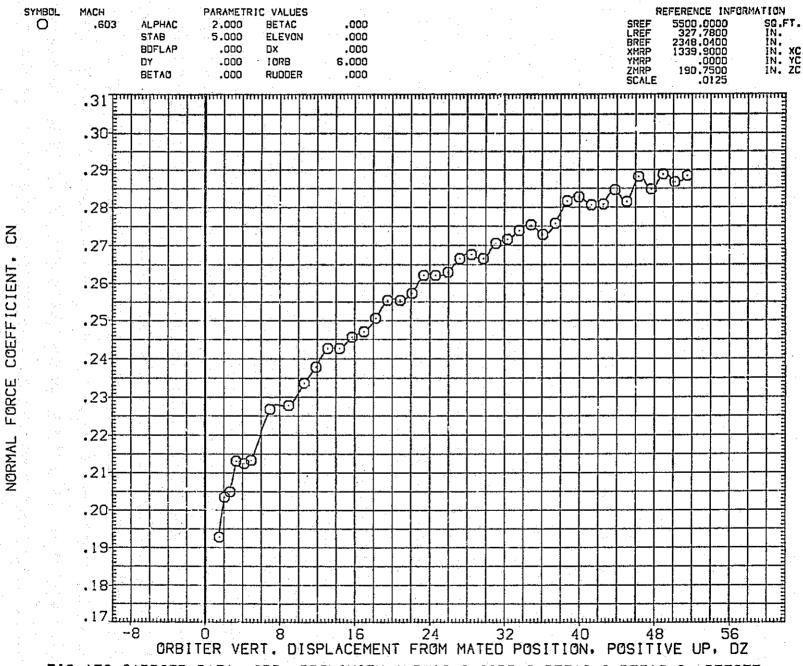


FIG.179 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO75

LTV44-559(CA26) 747/! ATY 02 S1 (CARRIER DATA) (RFE075)

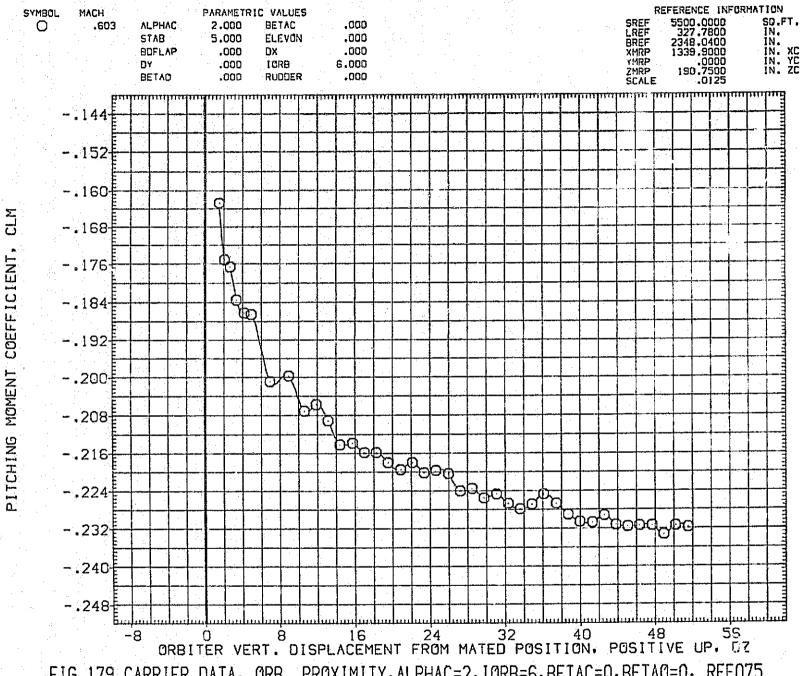
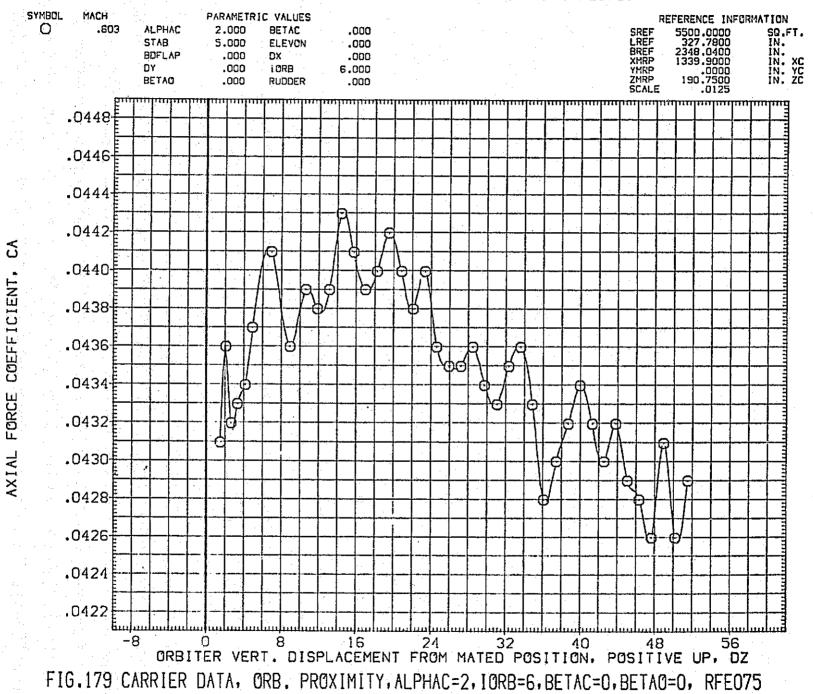


FIG.179 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO75

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE075)



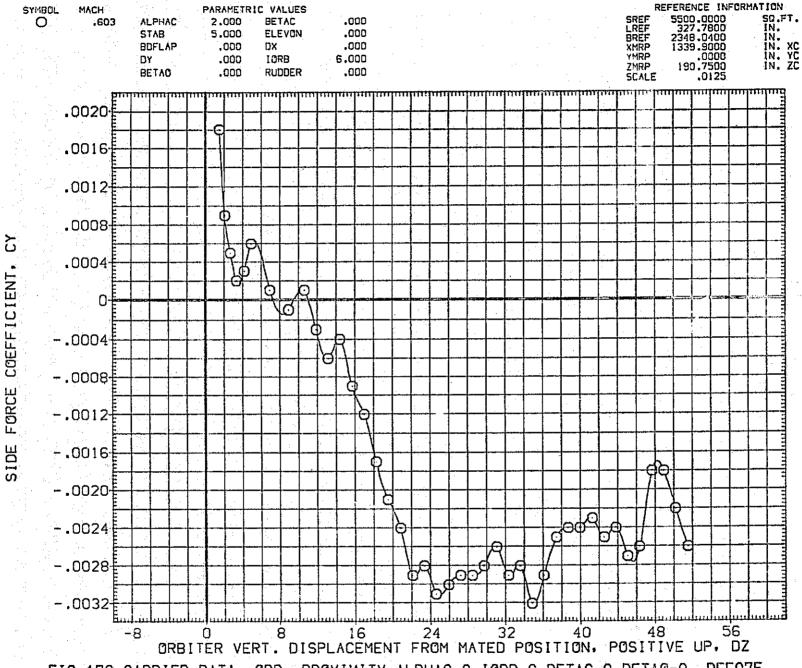


FIG.179 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO75
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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE075)

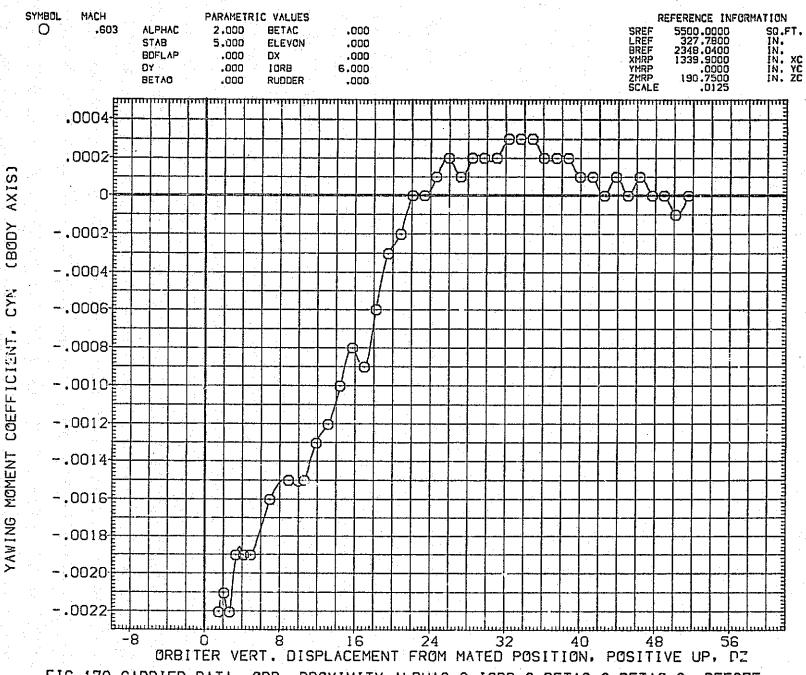
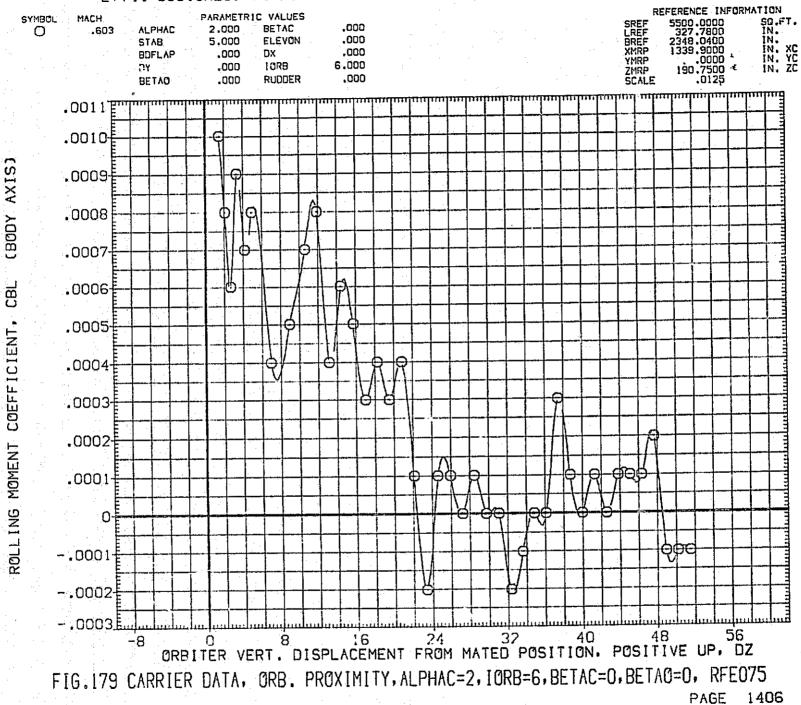


FIG.179 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=C, RFEO75

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE075)



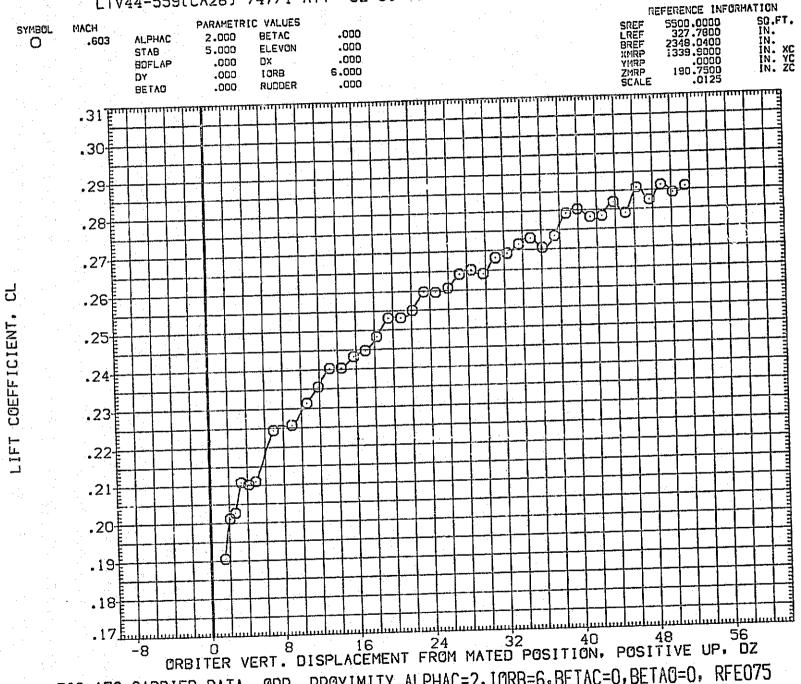


FIG.179 CARRIER DATA, OR3. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO75 1407

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE075)

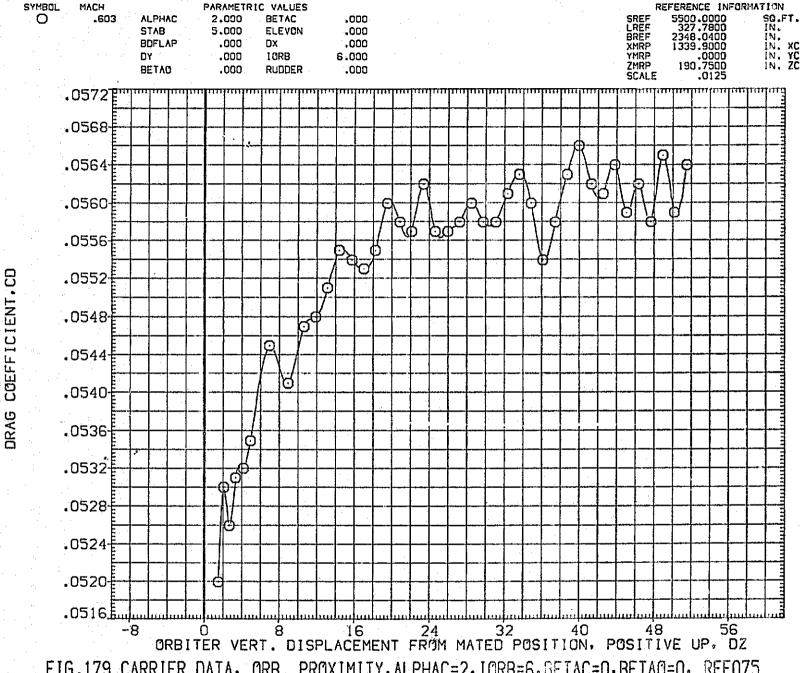


FIG.179 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO75

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE076)

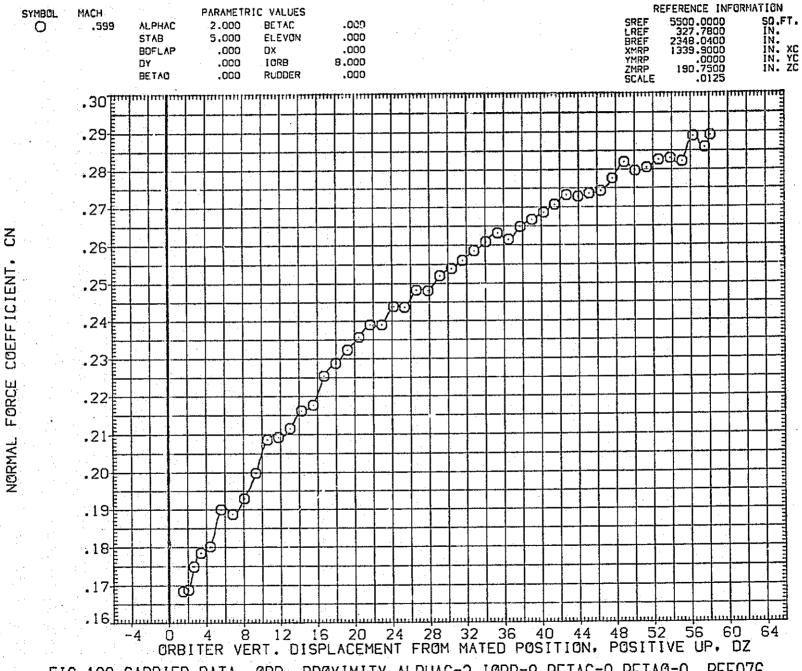


FIG.180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO76
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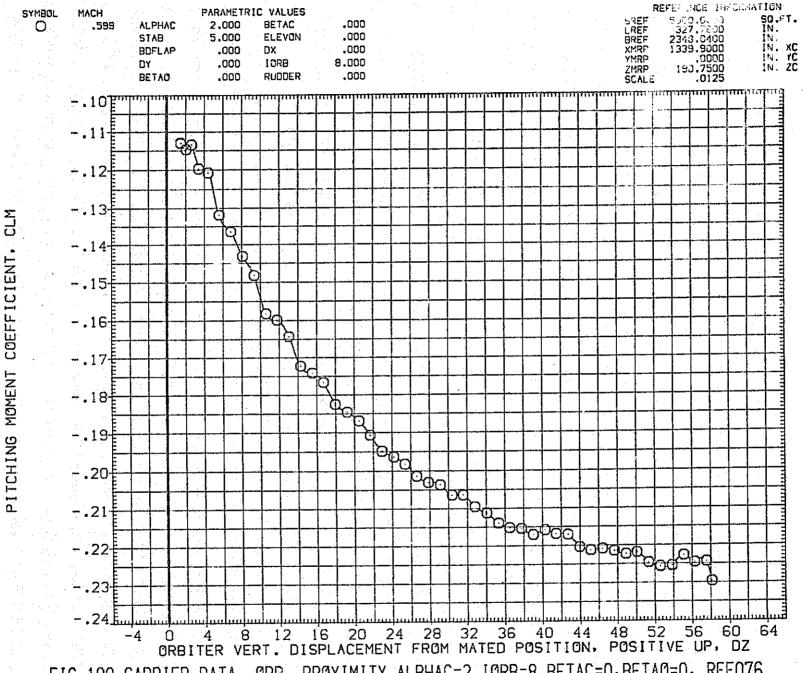


FIG.180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO76

## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE076)

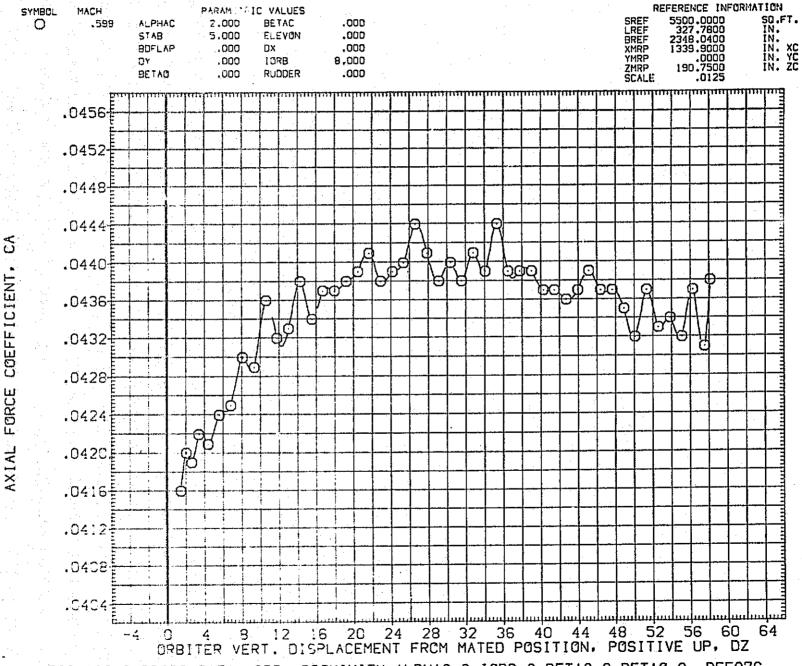


FIG. 180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE076
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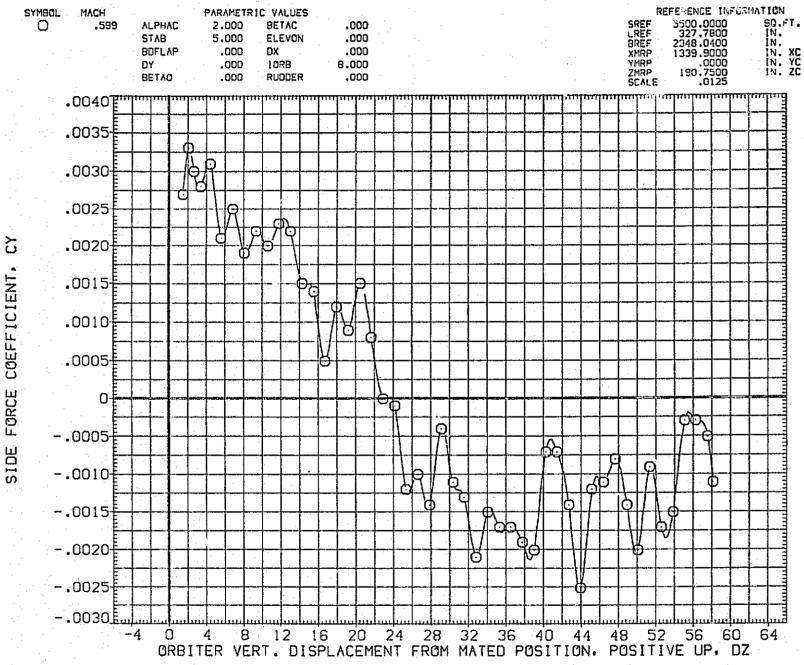
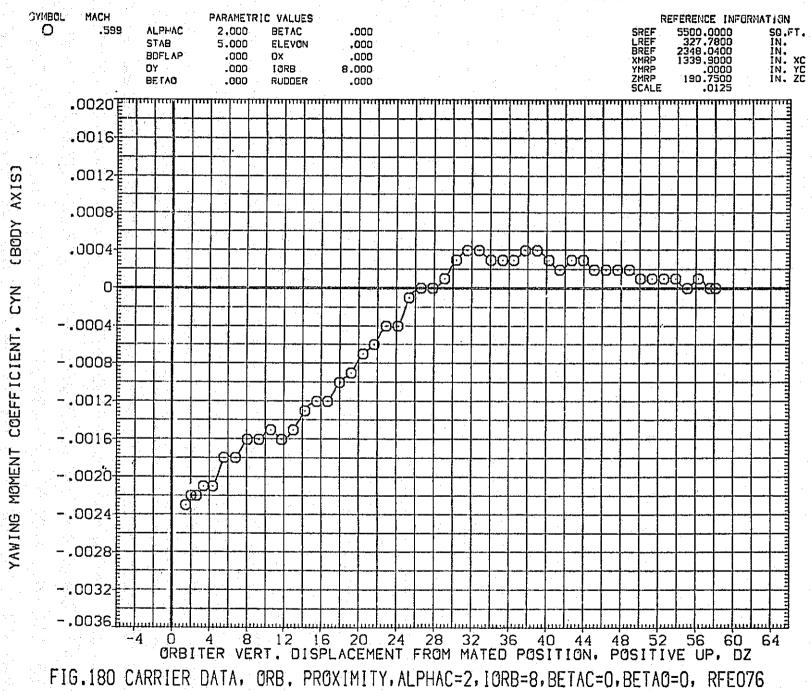


FIG.180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO76

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE076)



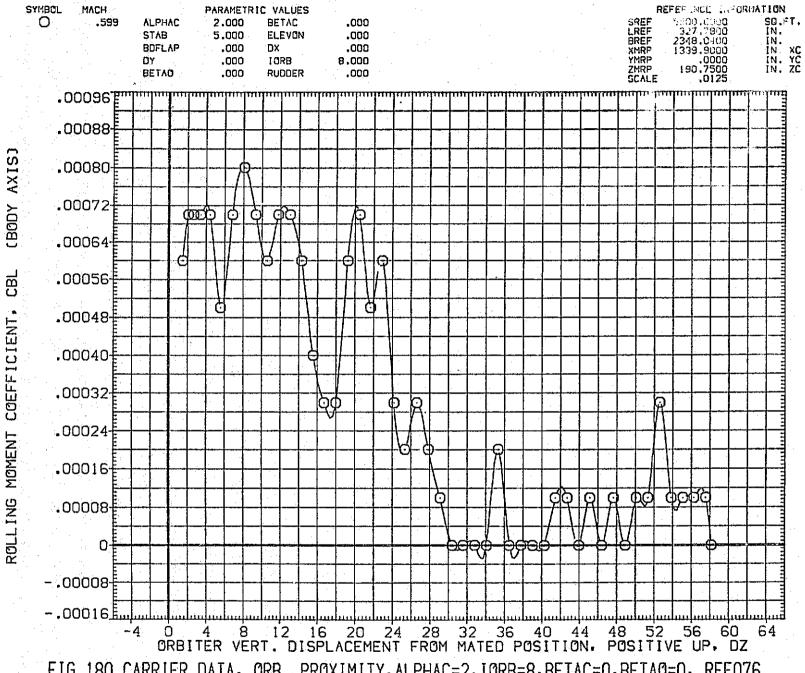
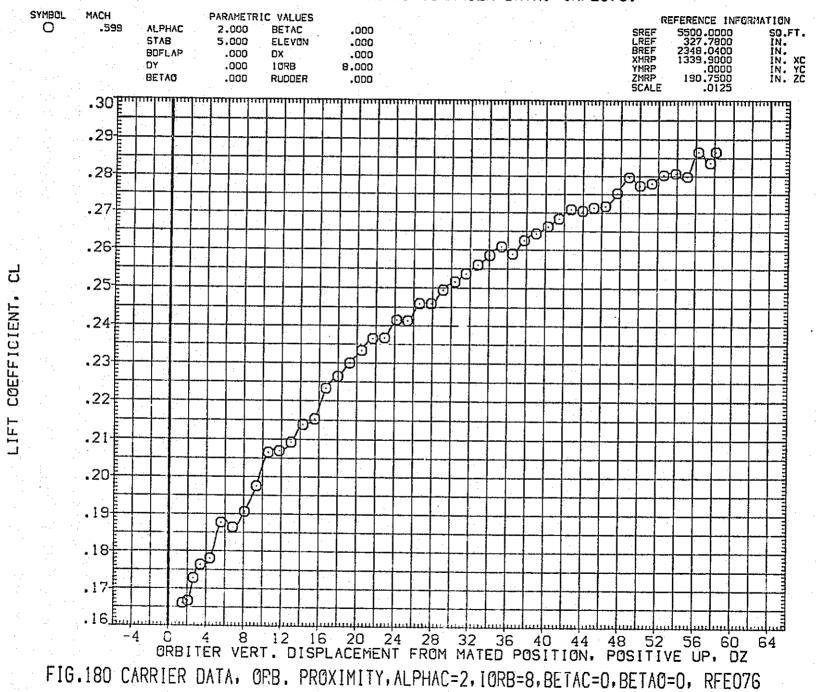


FIG.180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO76

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE076)



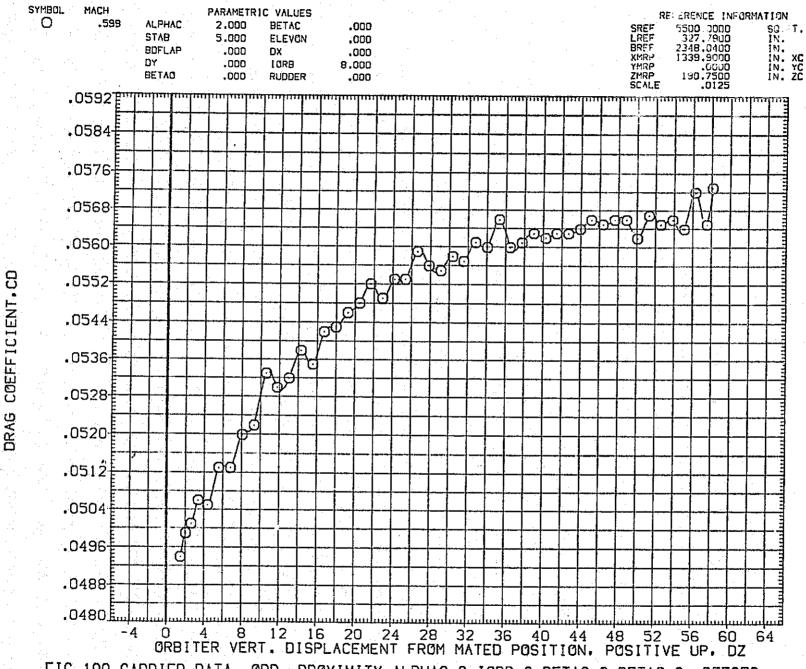


FIG.180 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFEO76

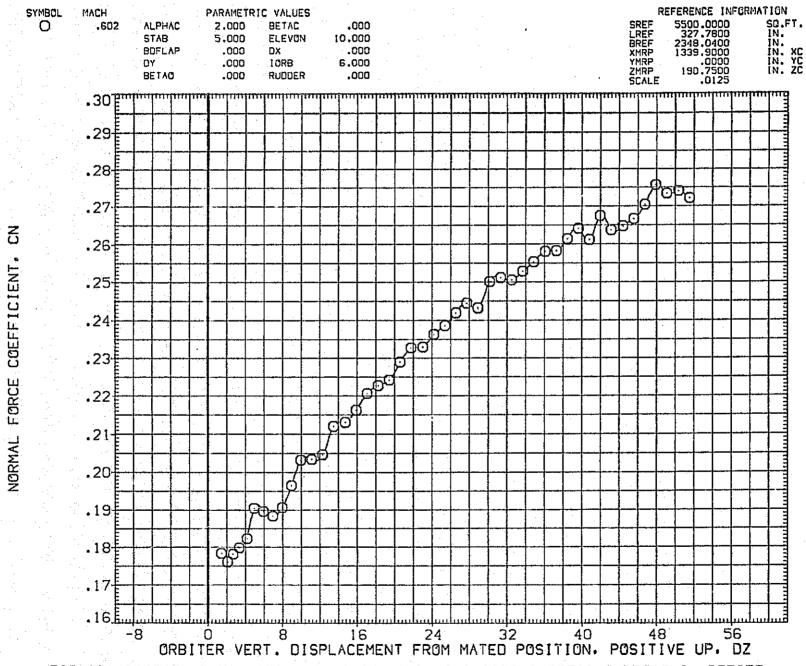


FIG.181 CARRIER DATA, ORB. PRUXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

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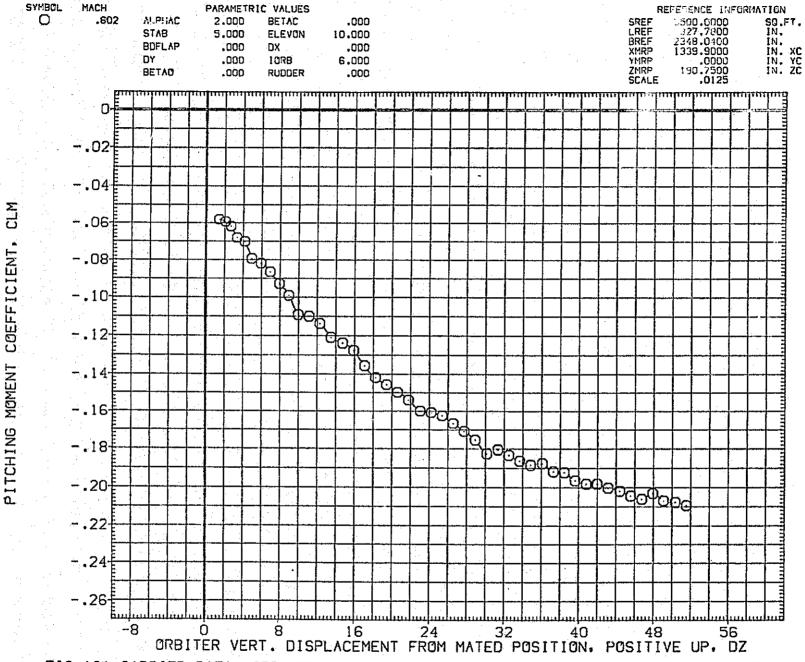


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

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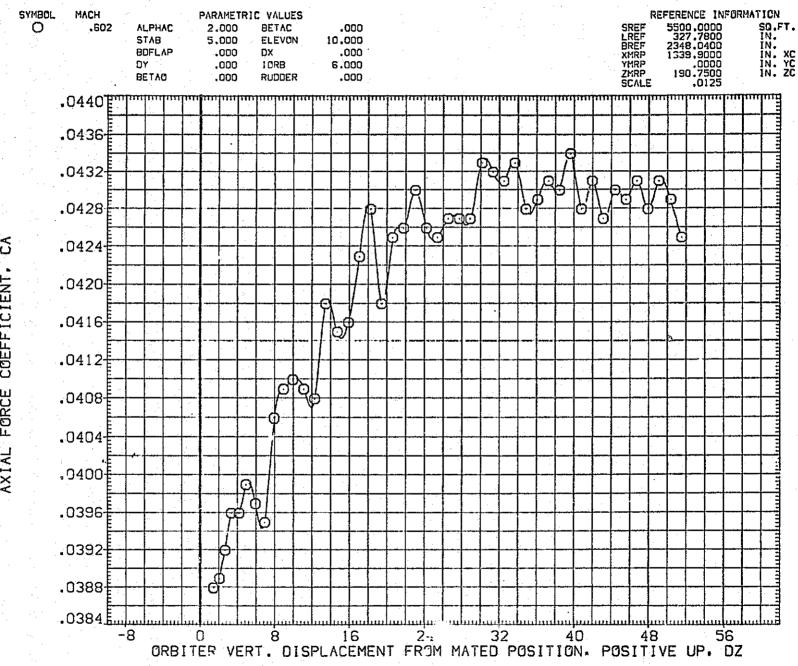


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6.BET/~=0.BETAO=0, RFEO77

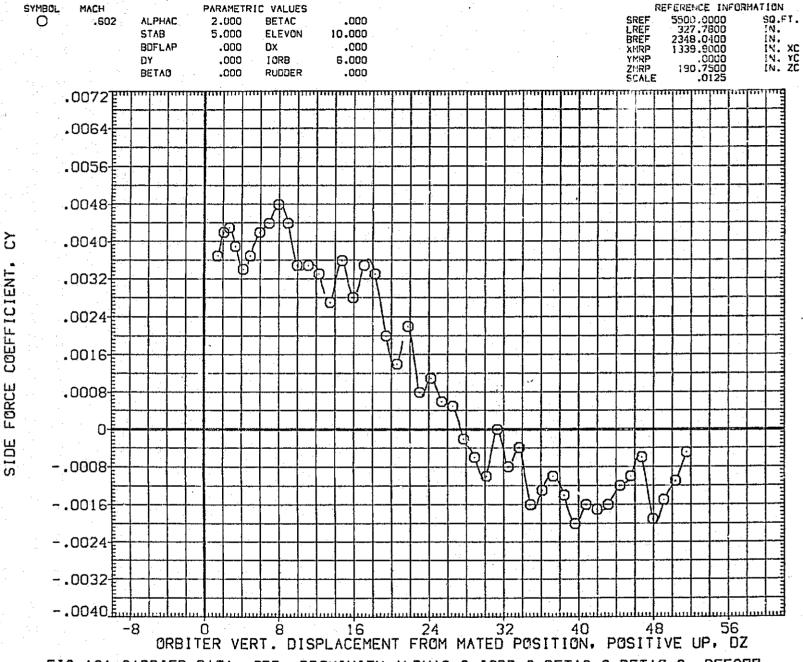


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE077)

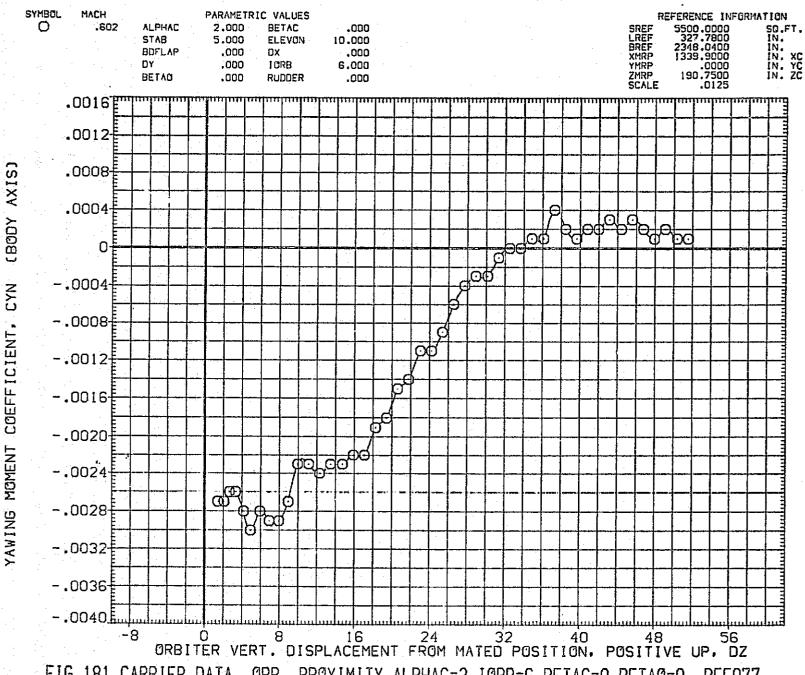


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

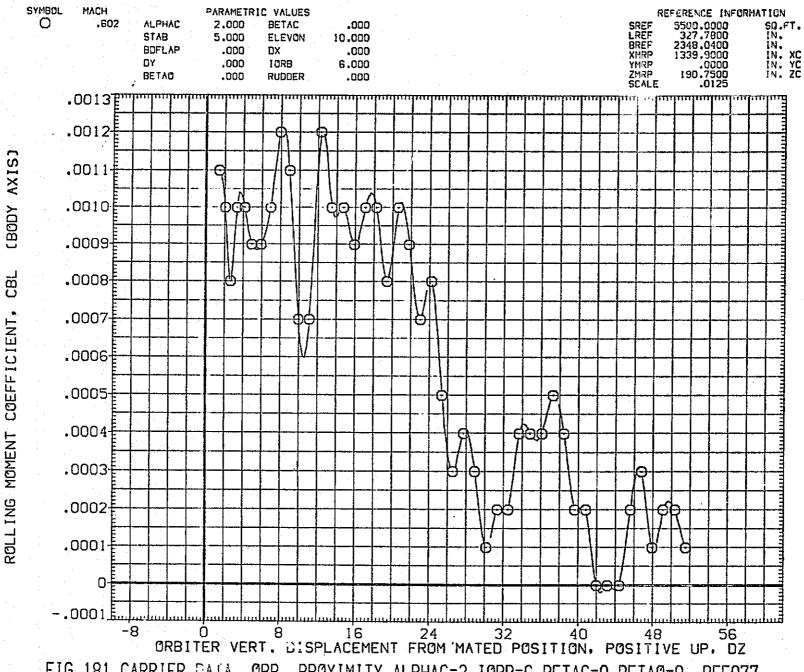


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

FIG.181 CARRIER DATA, OPB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77

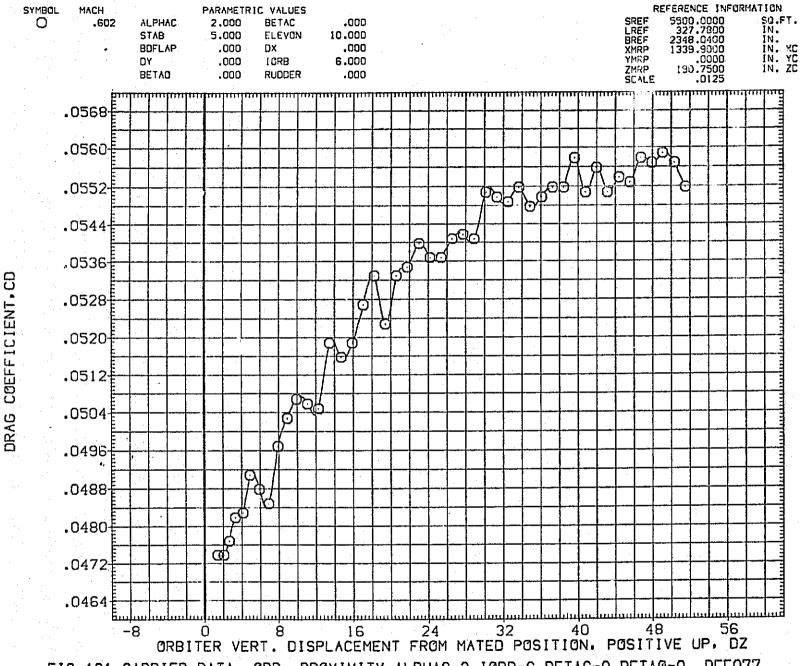


FIG.181 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFEO77
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE078)

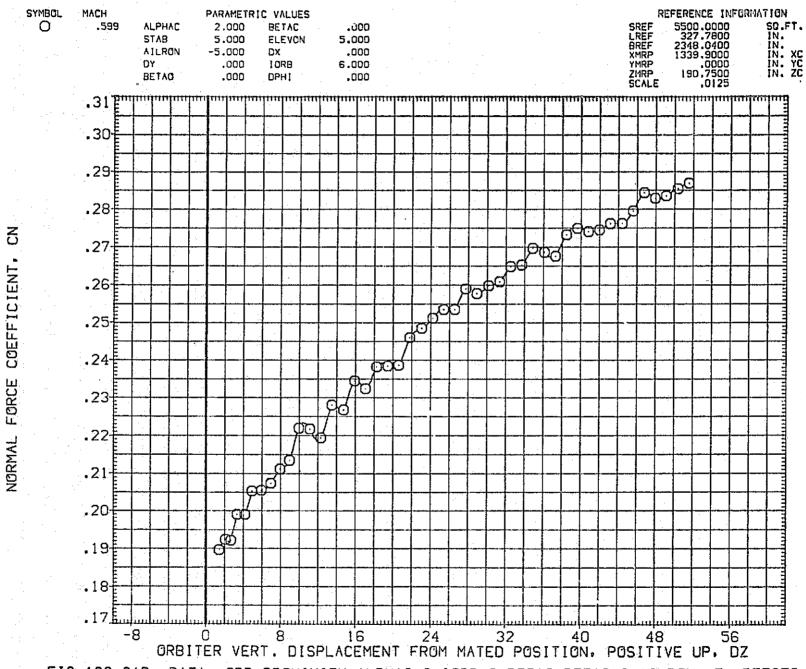


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFE078

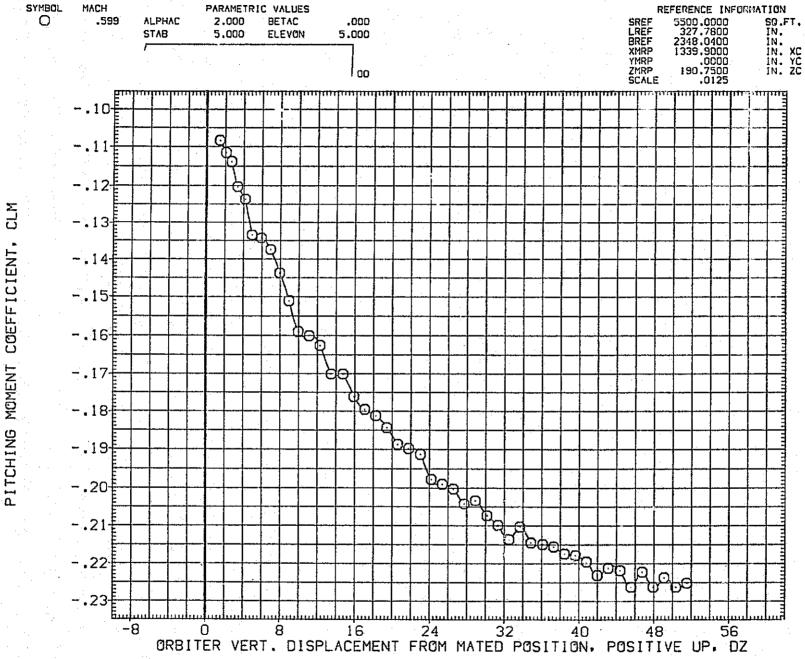


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFEO78
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE078)

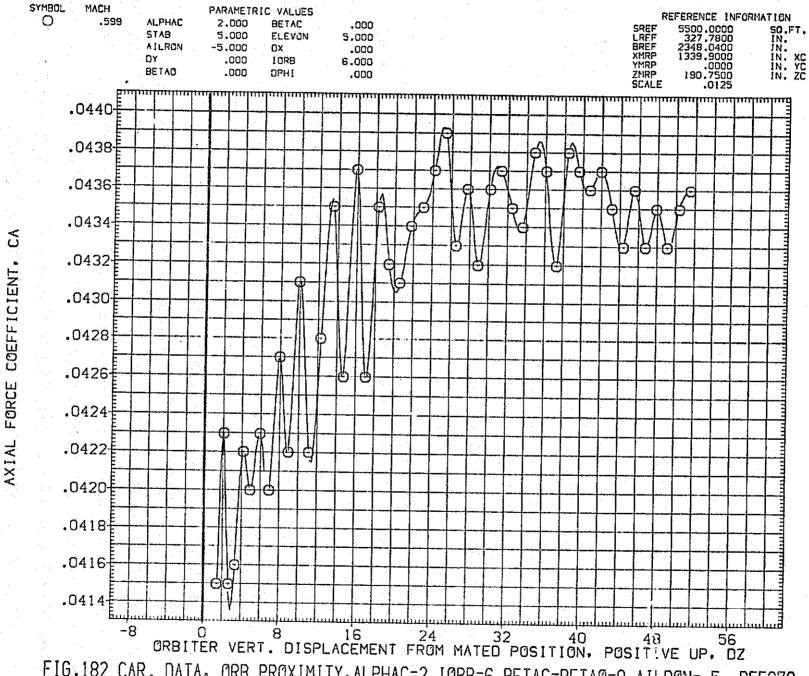


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFE078

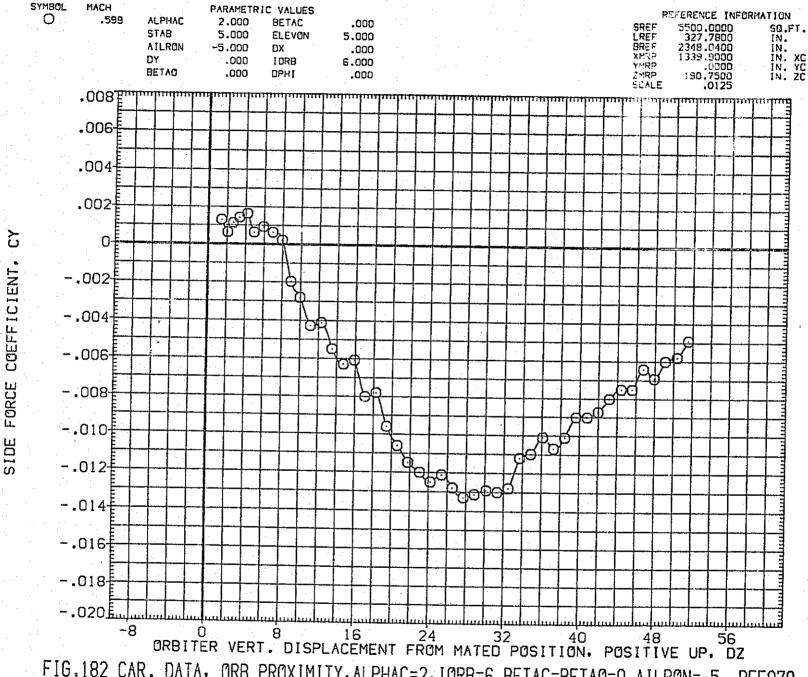
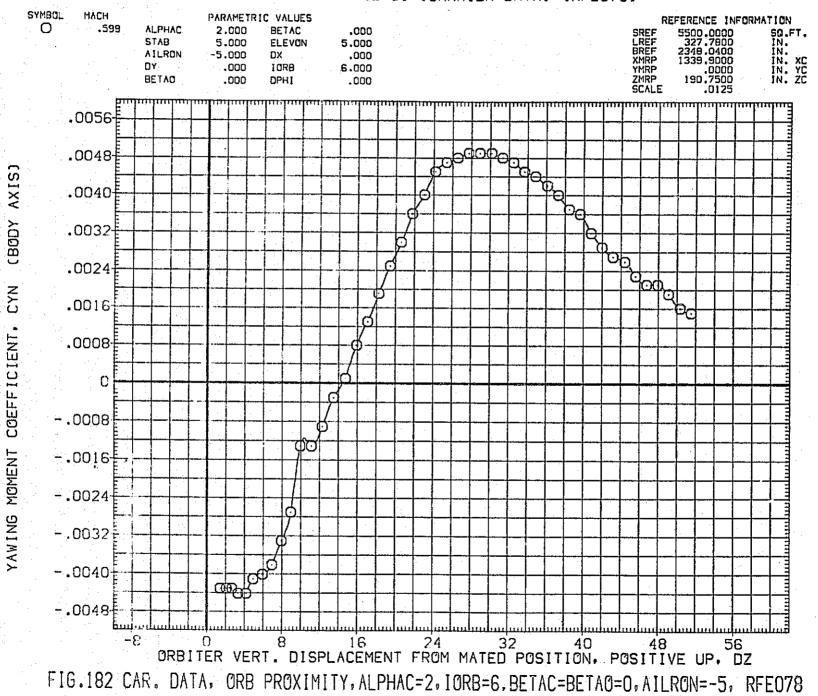


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFEO78
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE078)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE078)

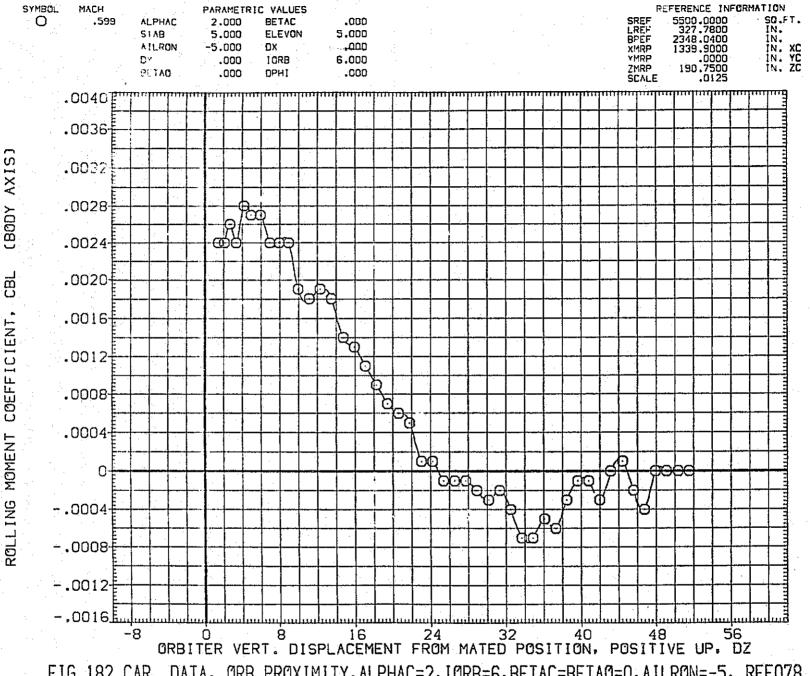


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFEO78
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FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFEO78

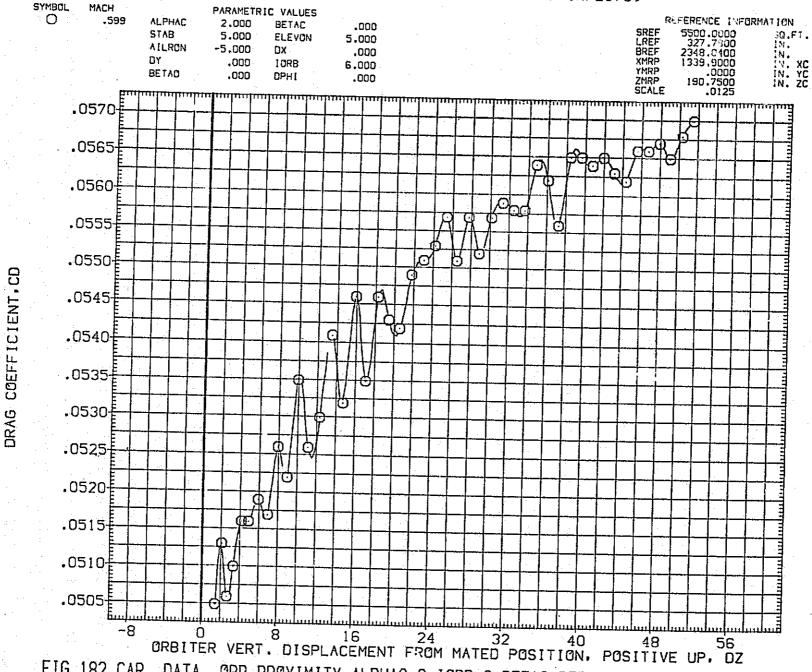


FIG.182 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, AILRON=-5, RFE078

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FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFEO79

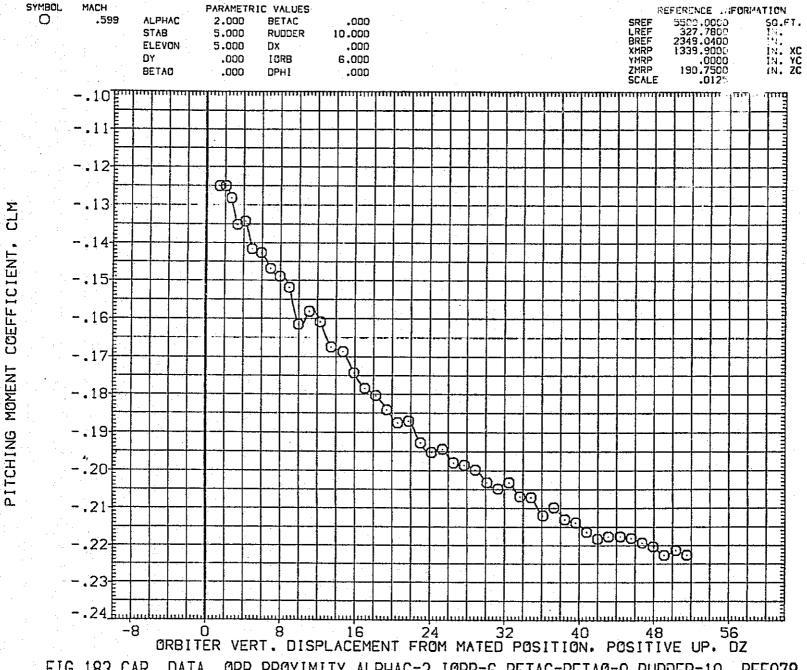


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFEO79
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE079)

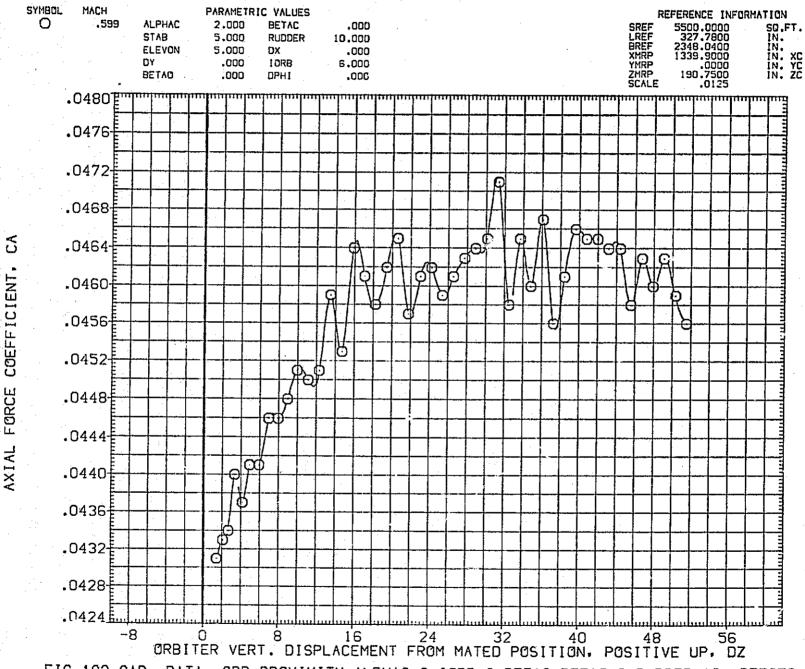


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFEO79

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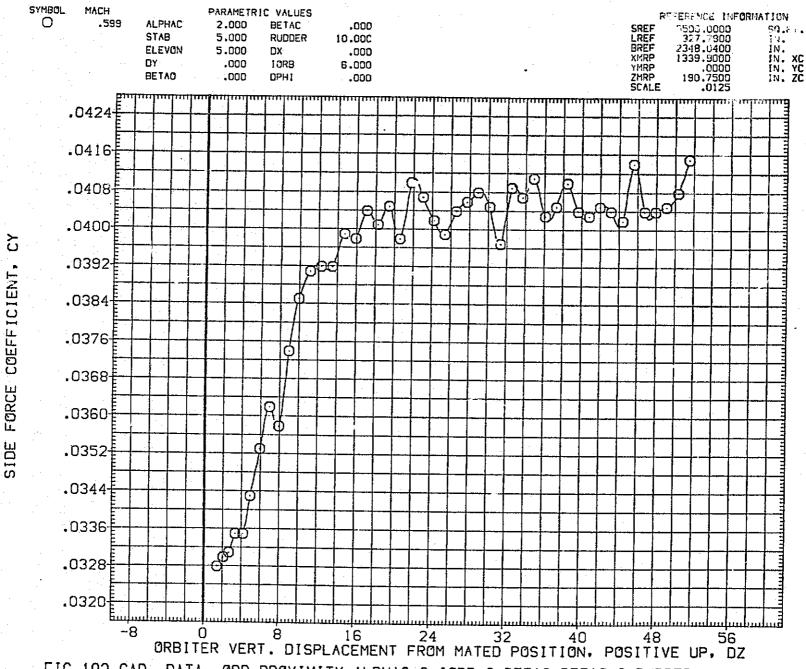


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFE079

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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE079)

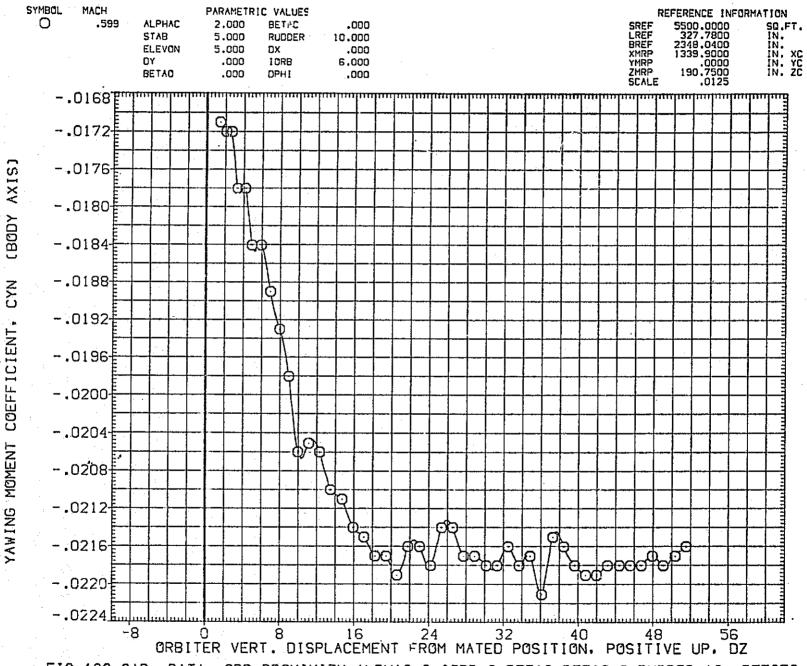


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFE079

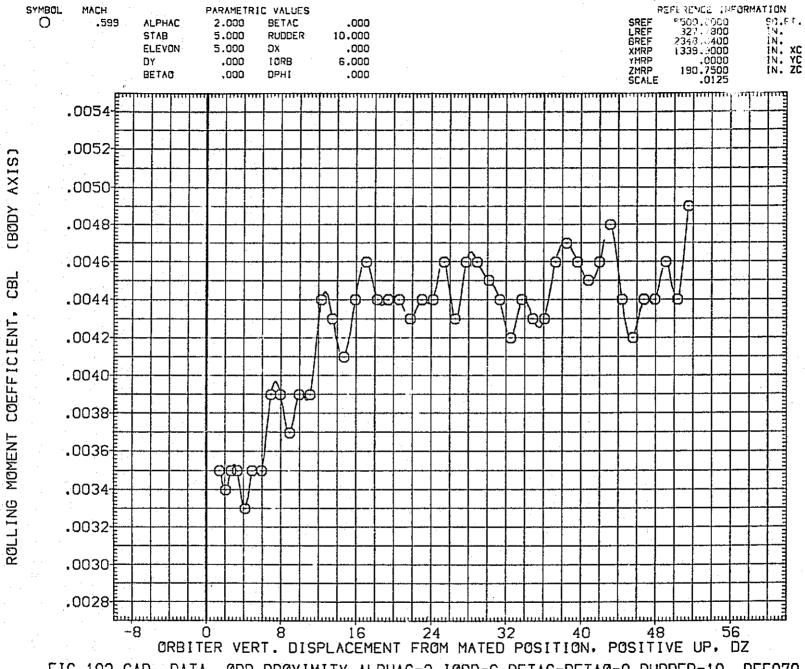


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFEO79
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FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFE079

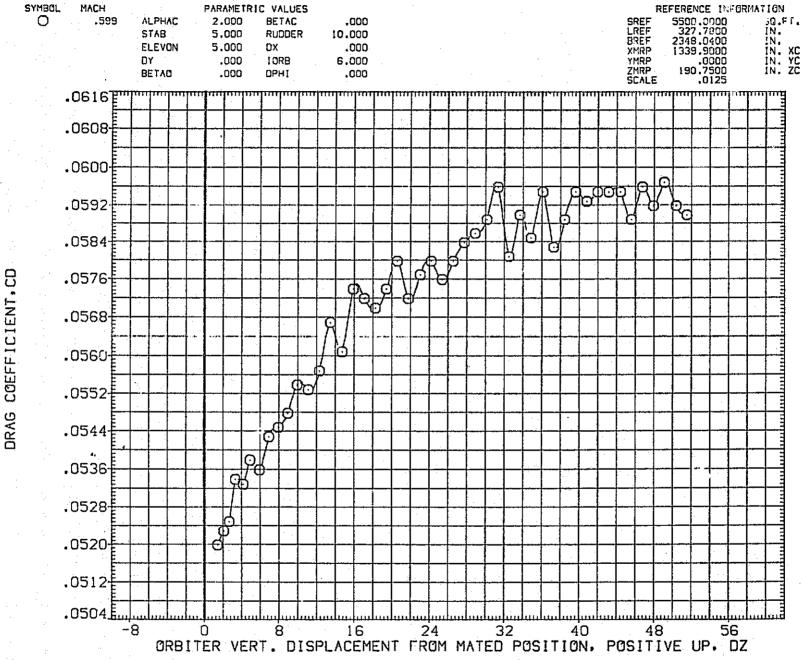


FIG.183 CAR. DATA, ORB PROXIMITY, ALPHAC=2, IORB=6, BETAC=BETAO=0, RUDDER=10, RFEO79

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE080)

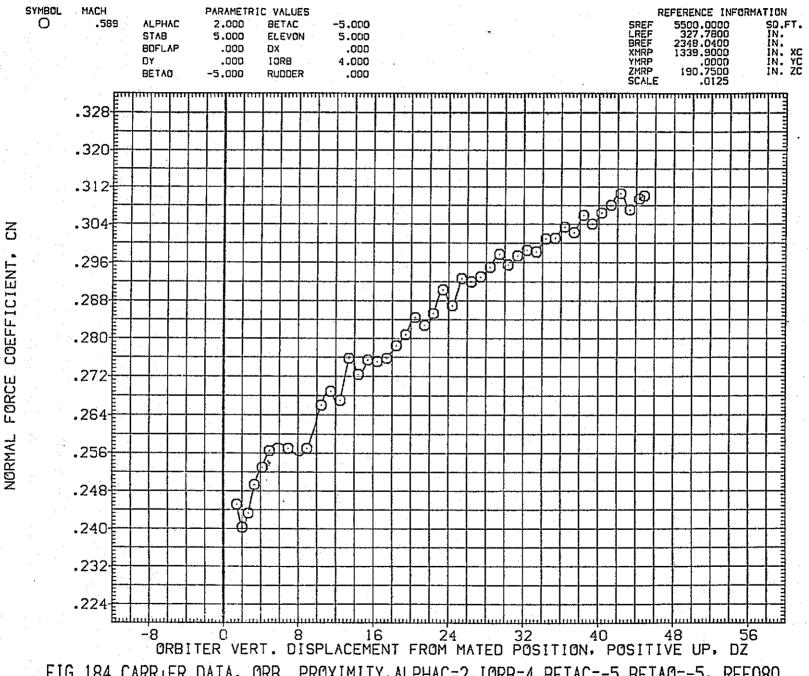
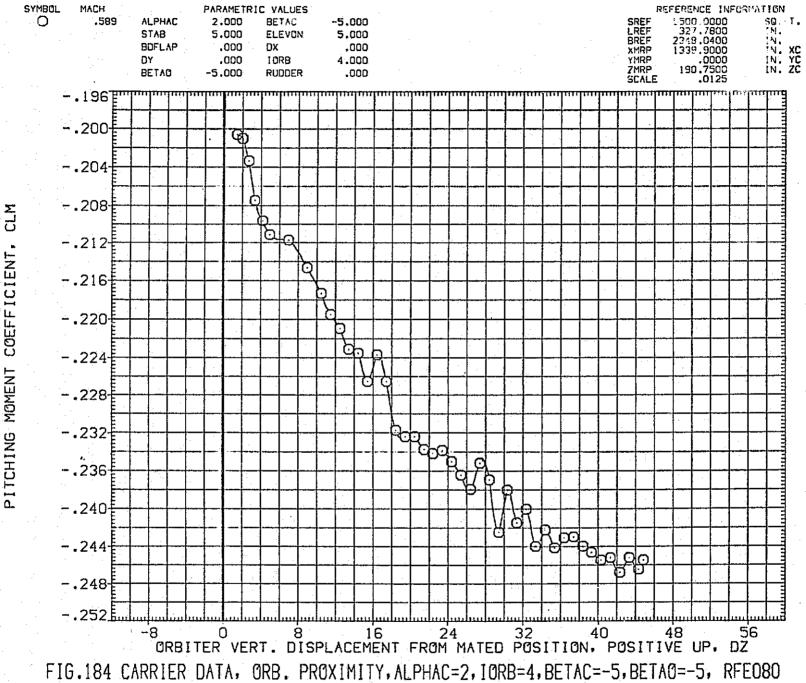
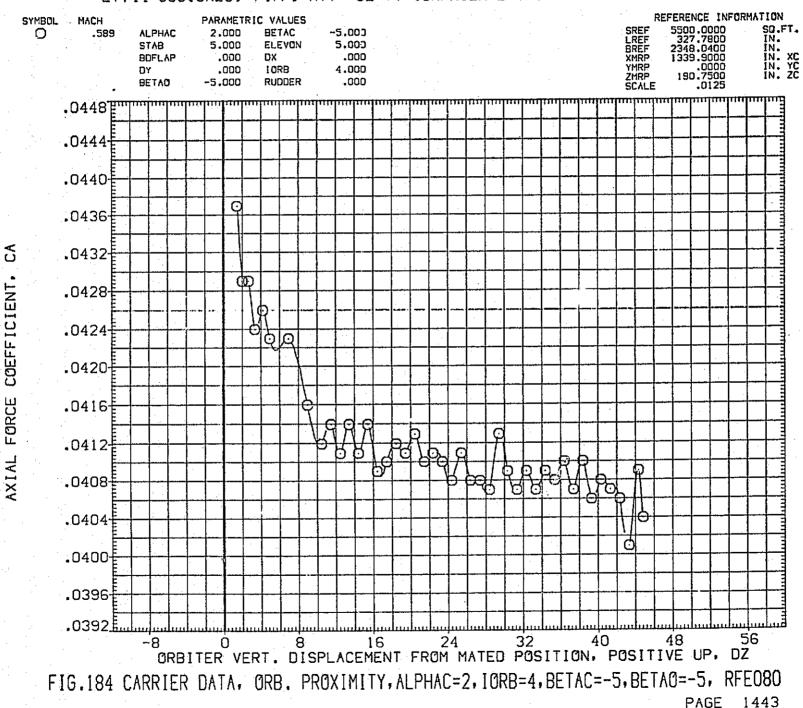


FIG.184 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=-5, BETAO=-5, RFEO80



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LTV44-559(CA26) 747/1 ATY 02 St (CARRIER DATA) (RFE080)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE080)

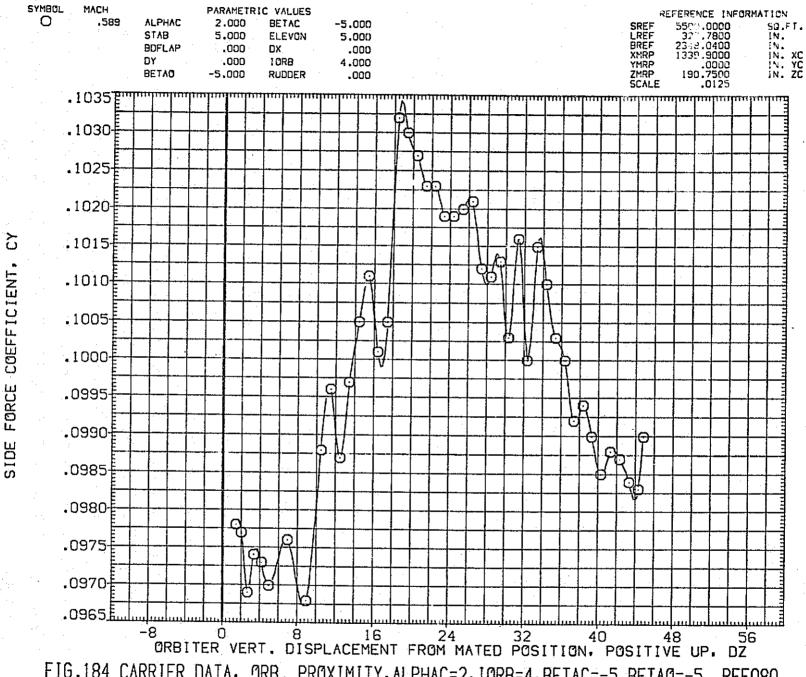
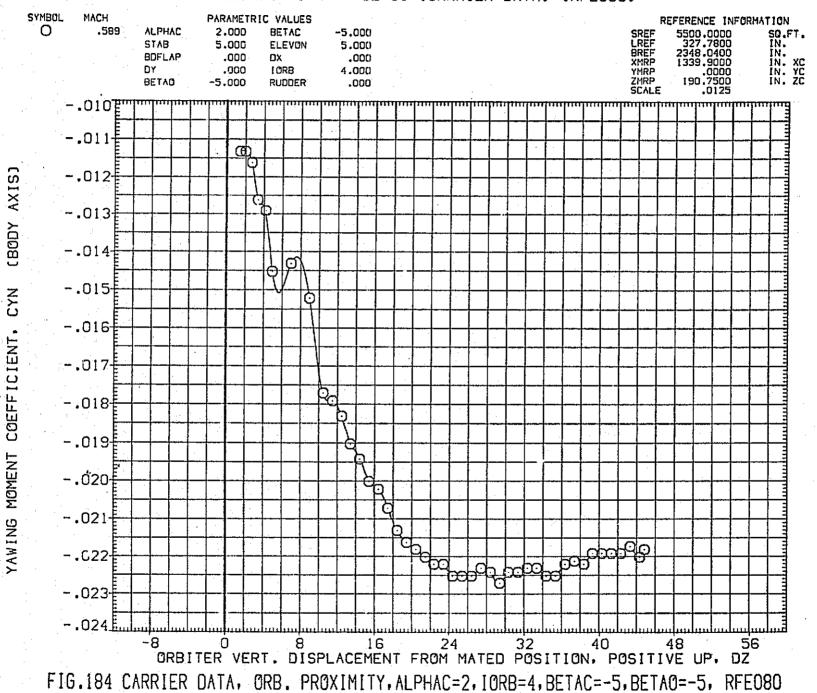


FIG.184 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=-5, BETAO=-5, RFEO80

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE080)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE080)

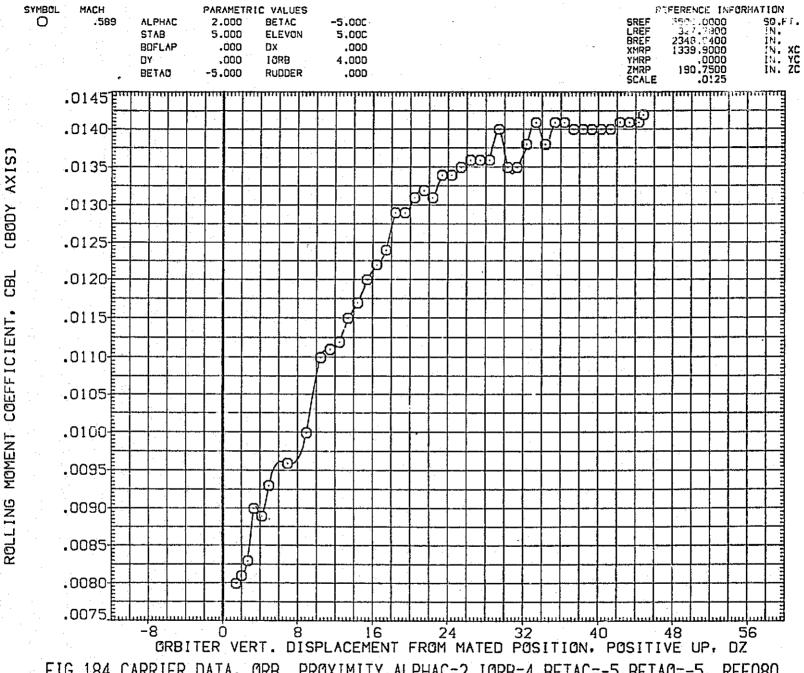


FIG.184 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=-5, BETAO=-5, RFEO80
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE080)

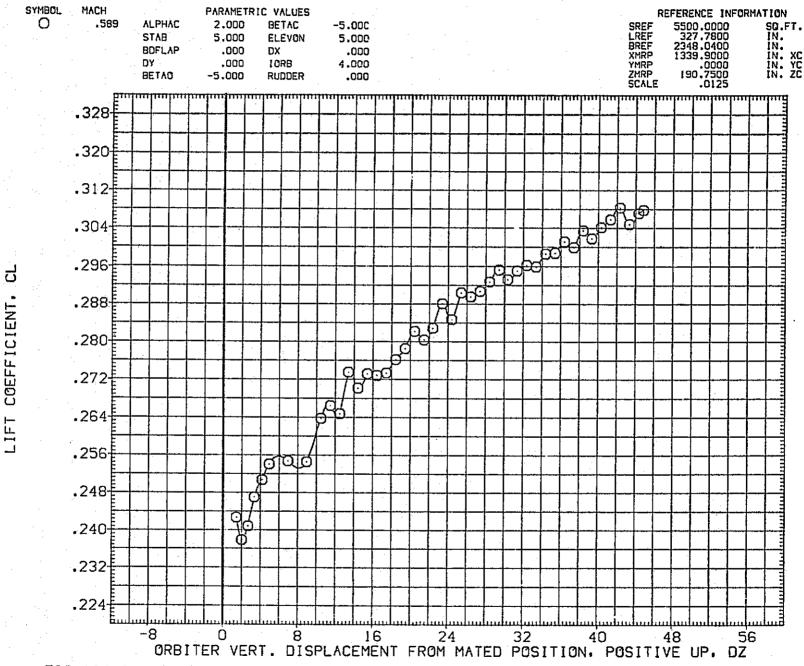


FIG.184 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=-5, BETAO=-5, RFEO80

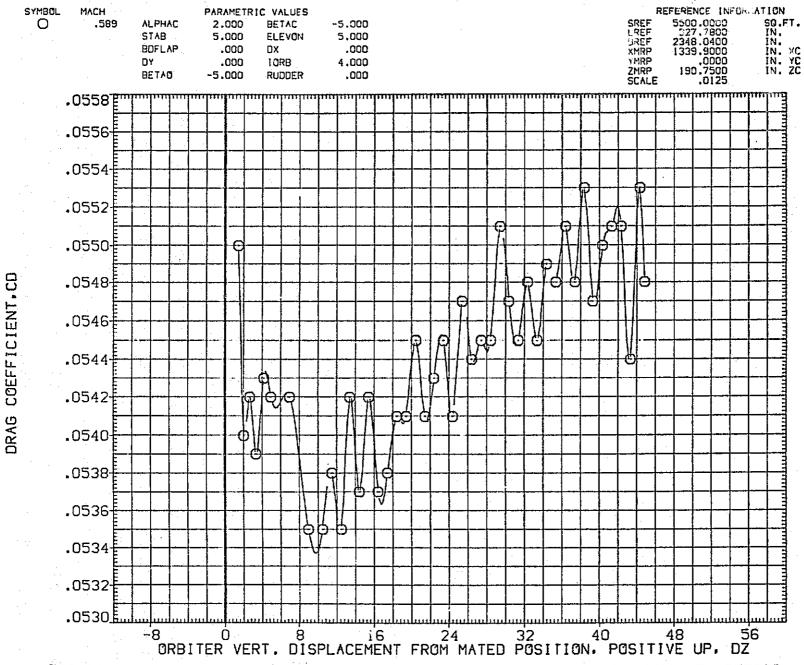


FIG.184 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=-5, BETAO=-5, RFEO80
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE081)

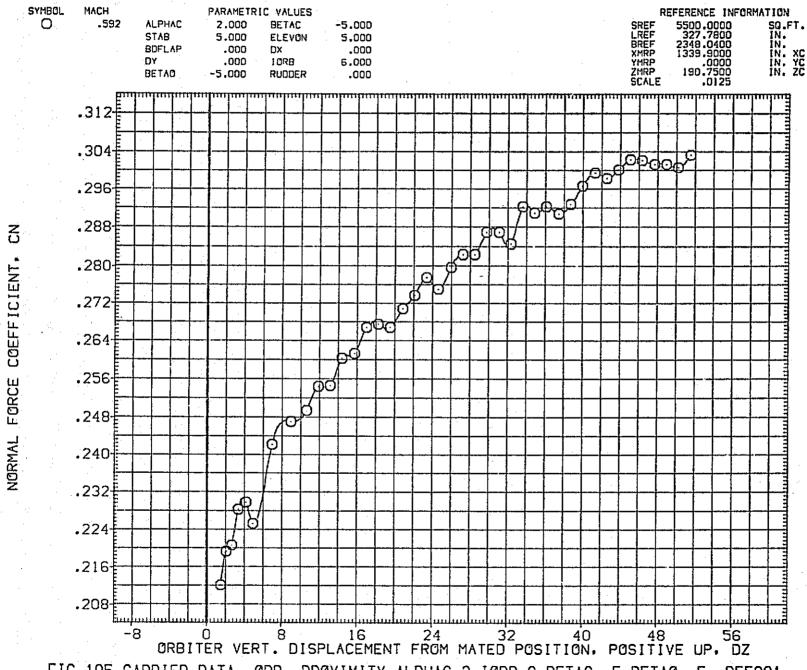


FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81

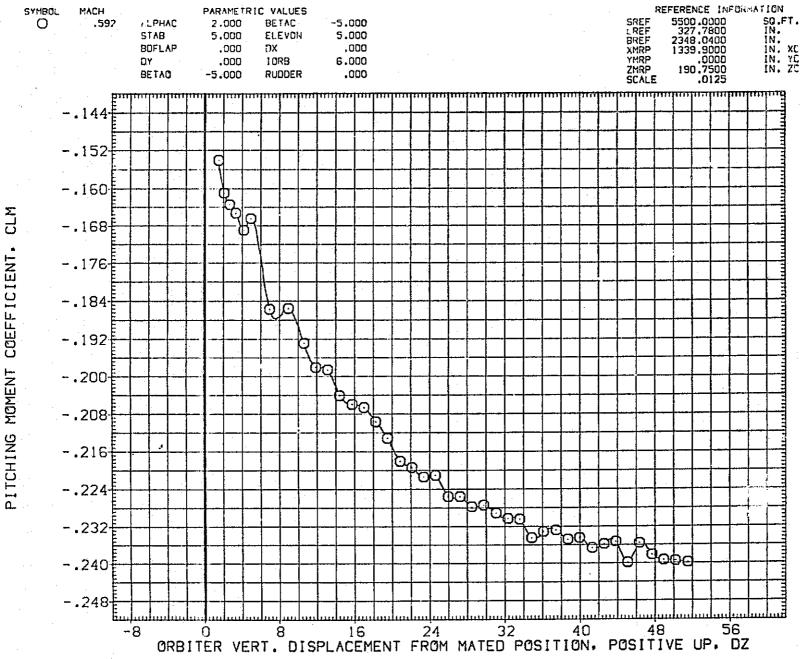
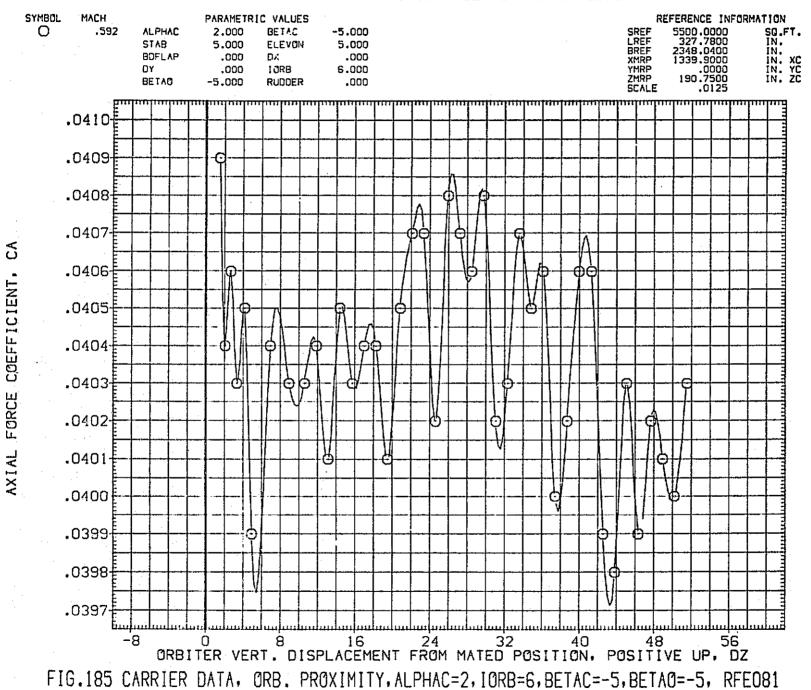


FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE081)



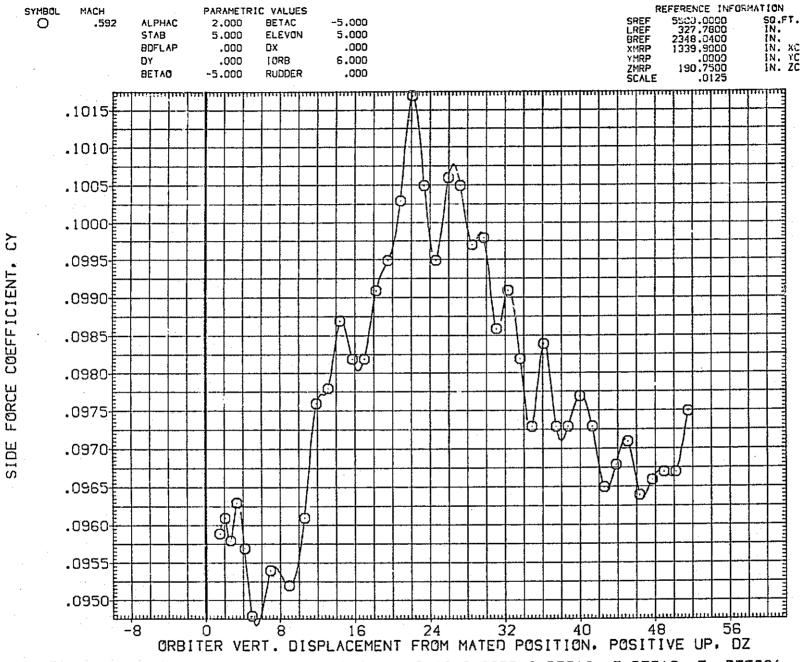


FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81

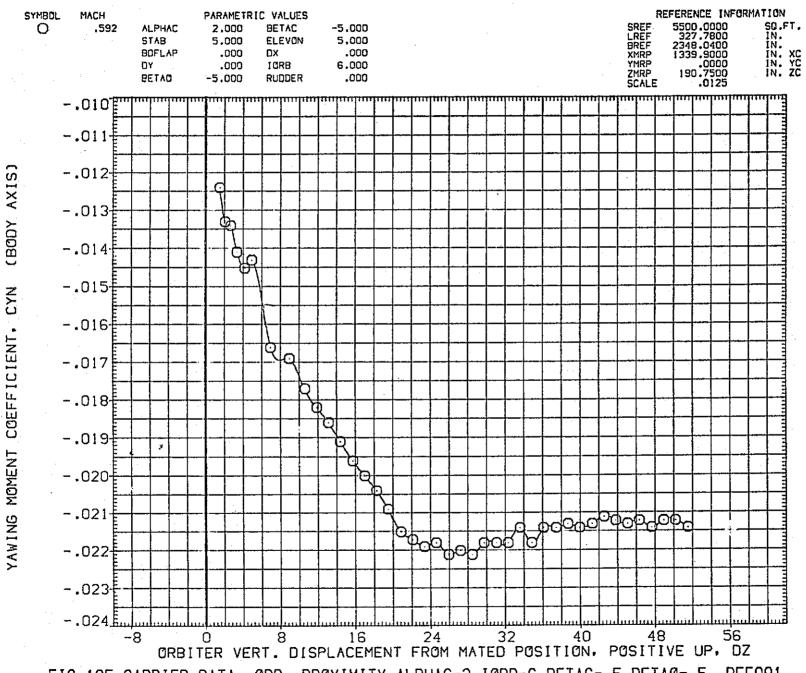
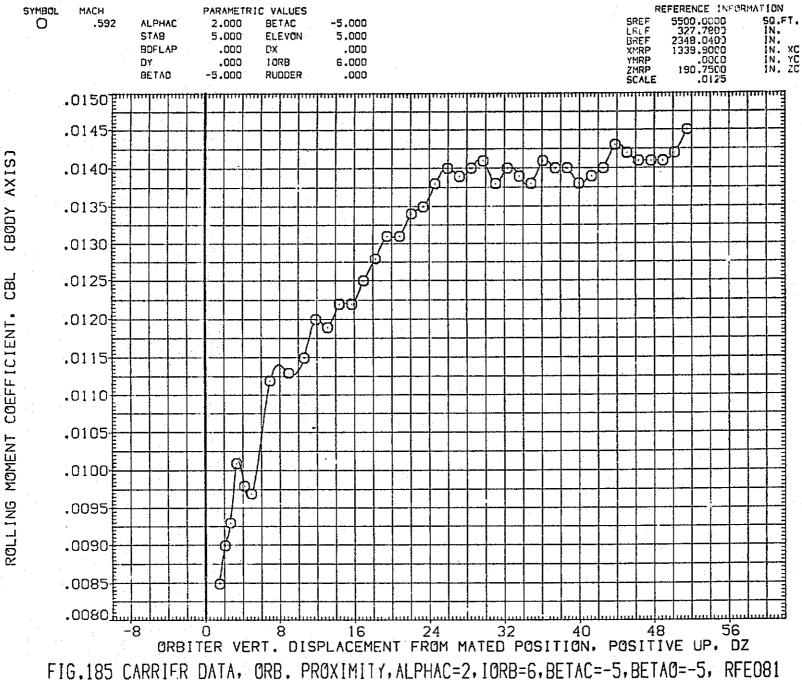


FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81



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FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81

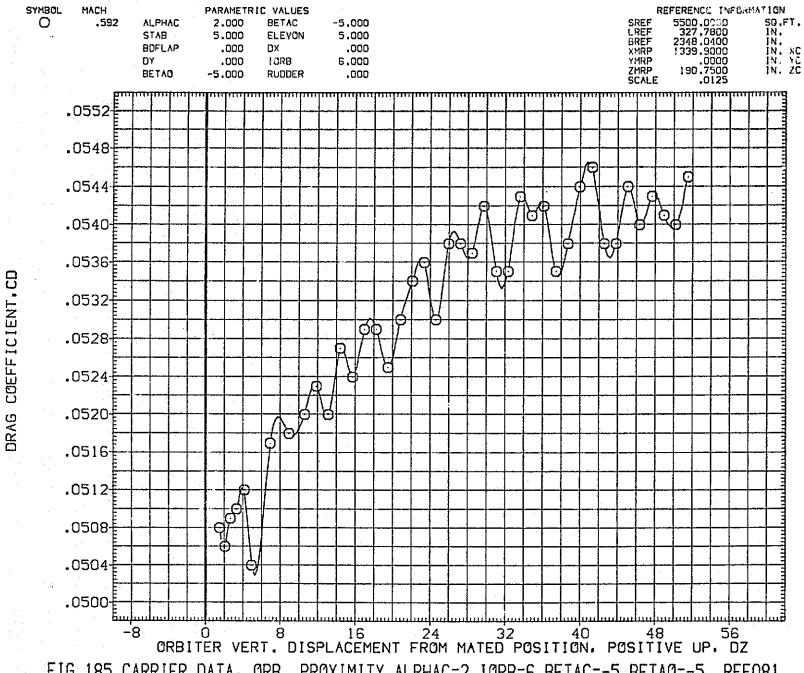


FIG.185 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFEO81

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE082)

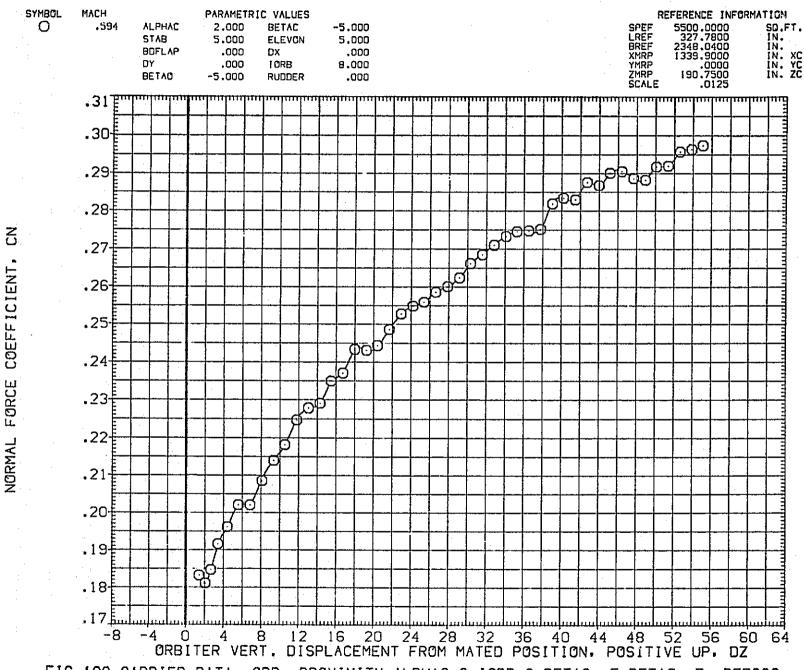


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

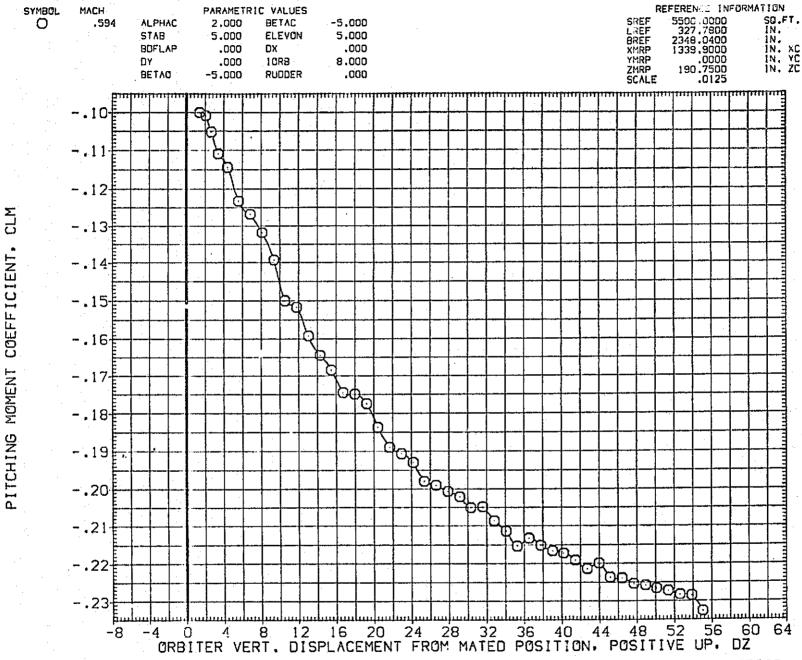


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

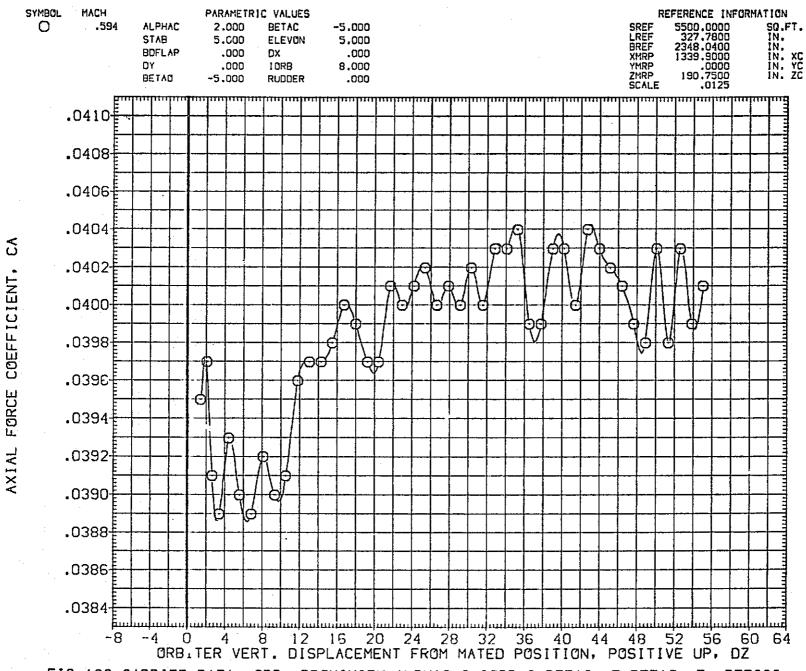


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

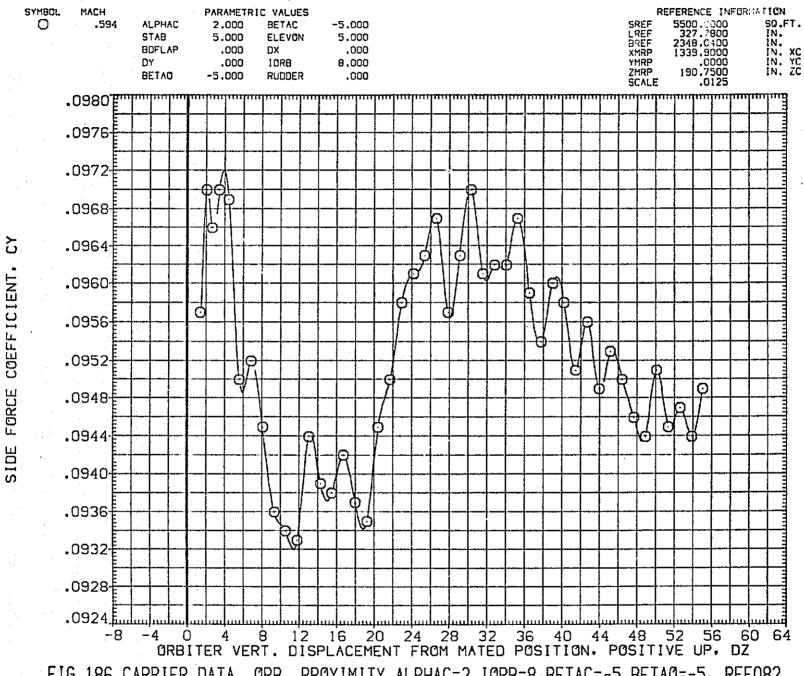


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFE082

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE082)

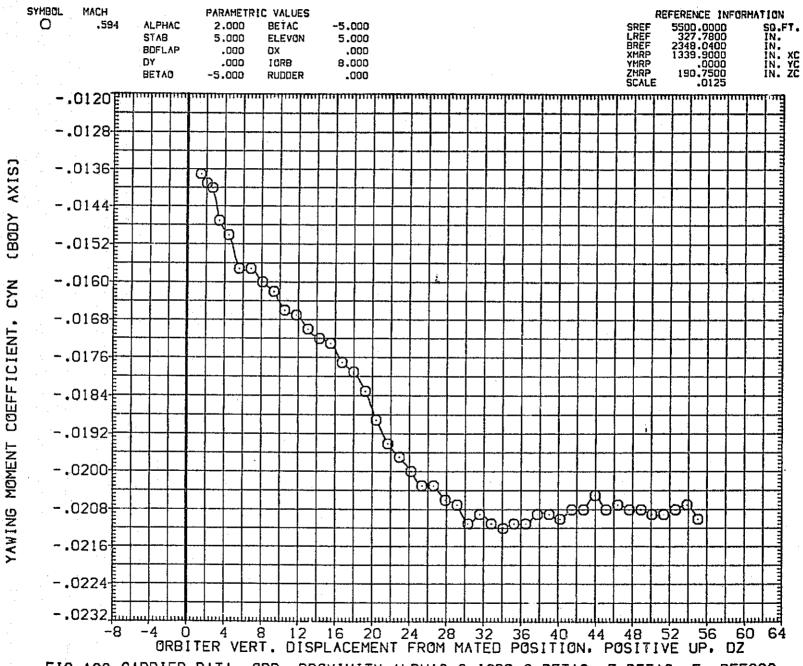


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

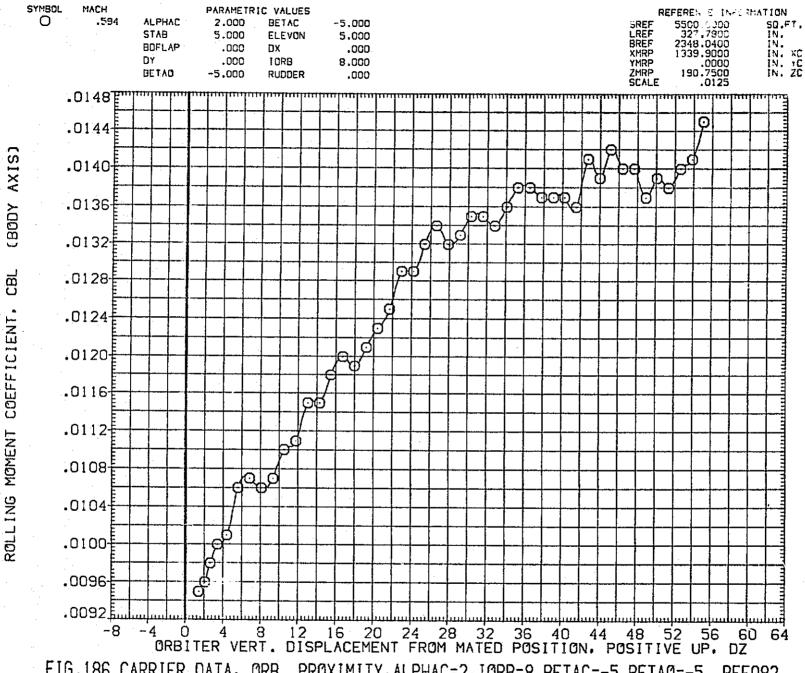


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE082)

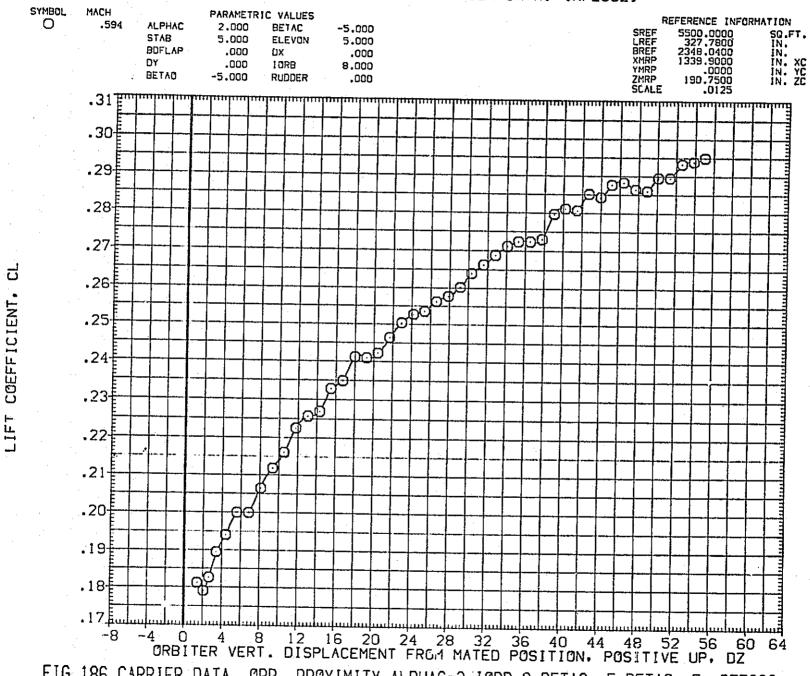


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

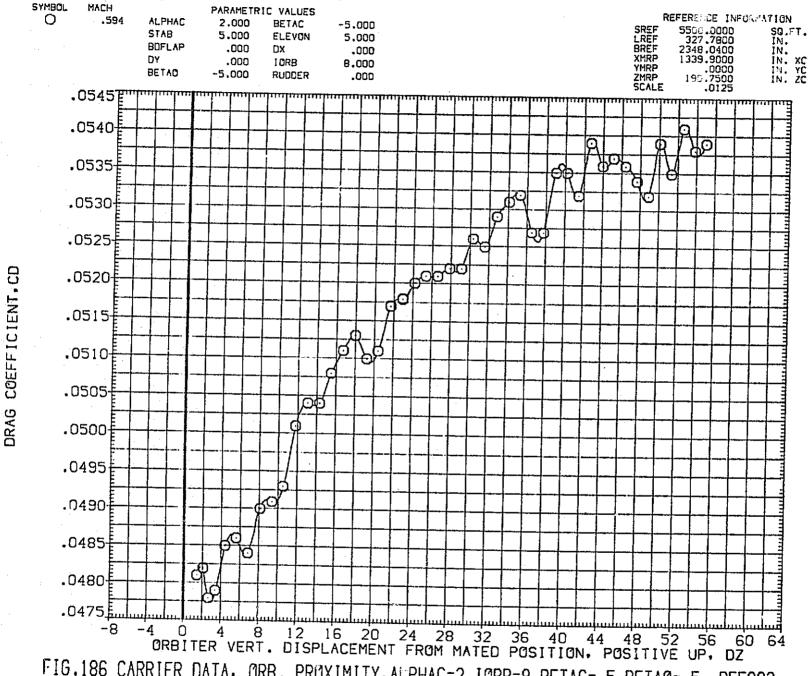
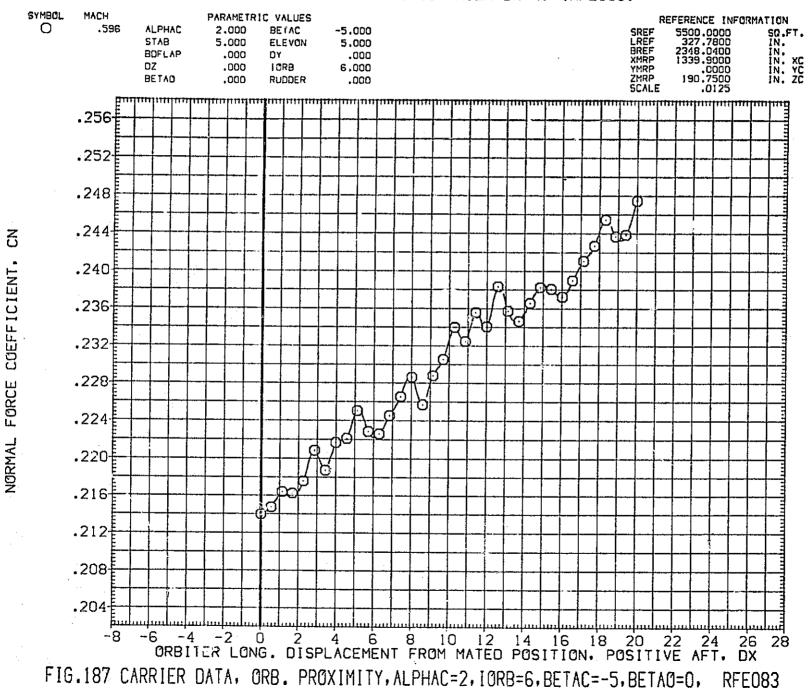


FIG.186 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=-5, BETAO=-5, RFEO82

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE083)

Sec. 3



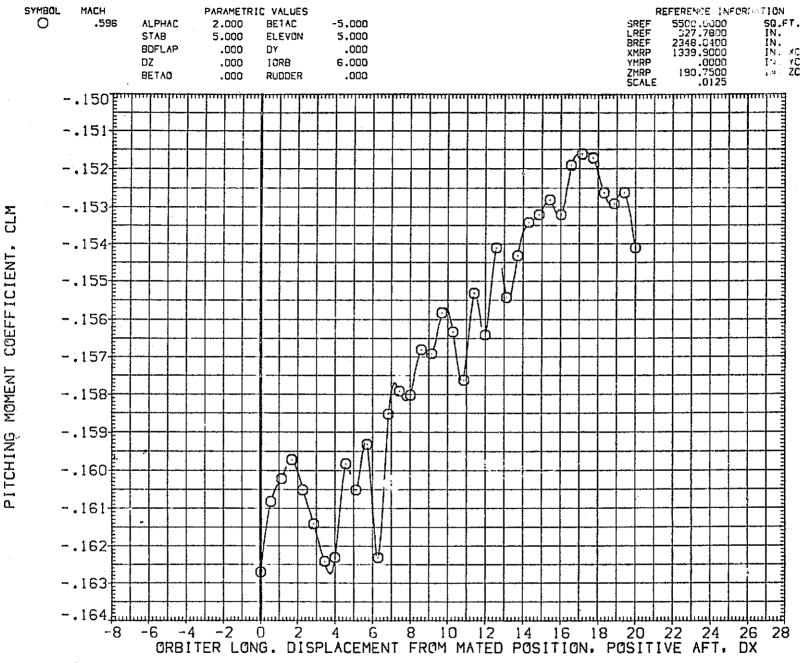
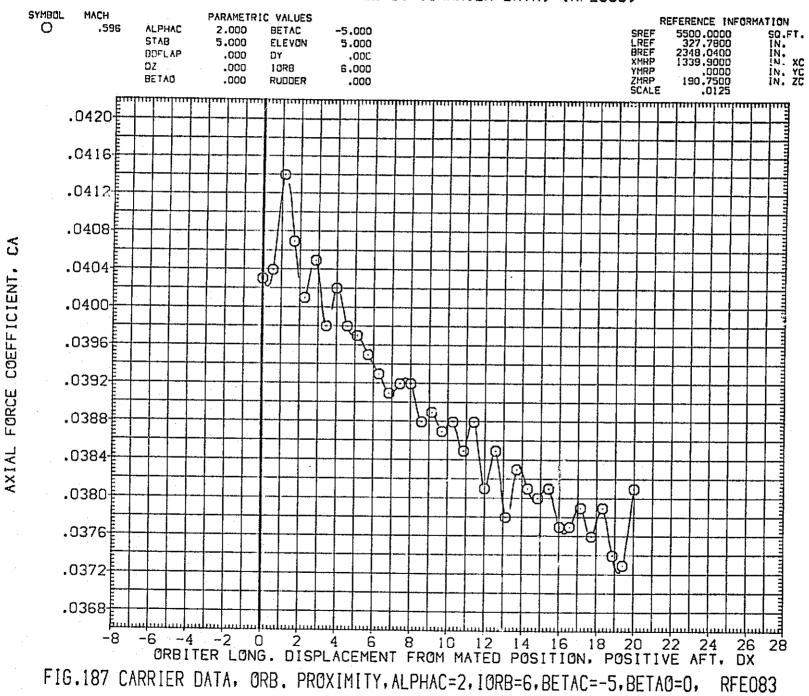


FIG.187 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO83

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE083)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE083)

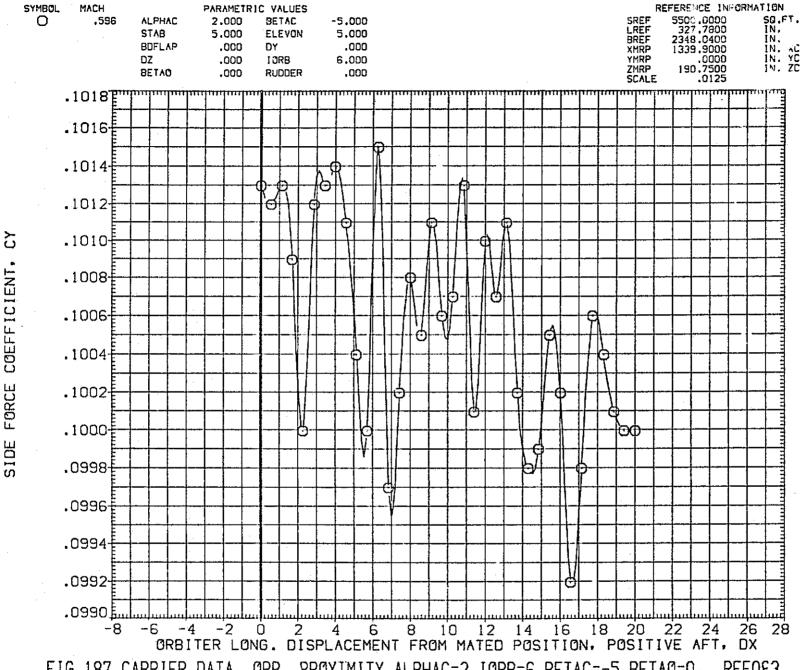
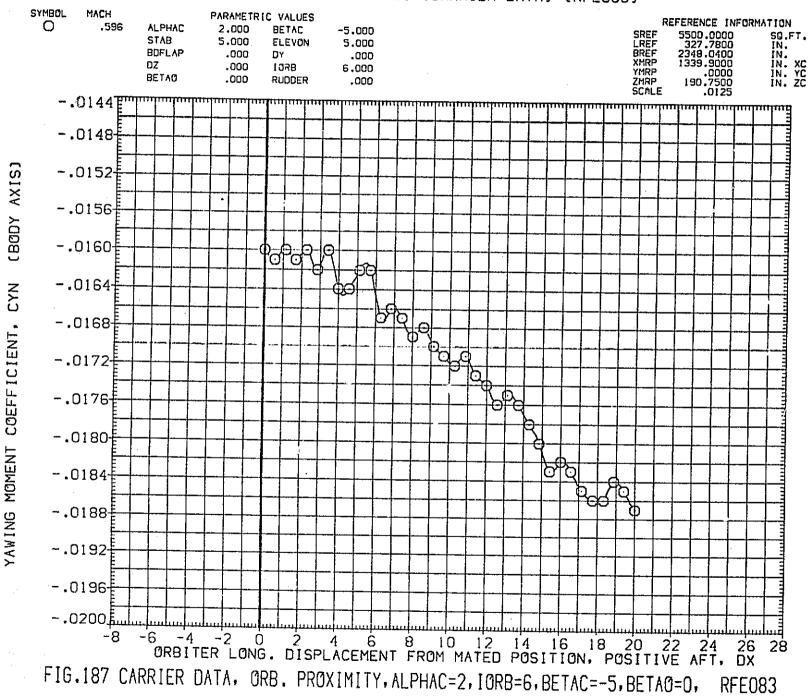


FIG.187 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE083

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE083)



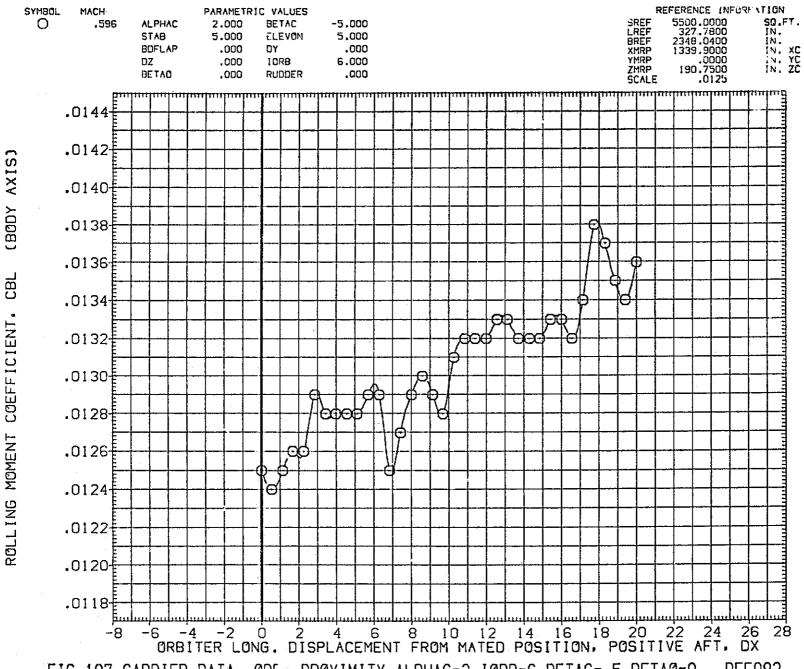


FIG.187 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO83

FIG.187 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO83

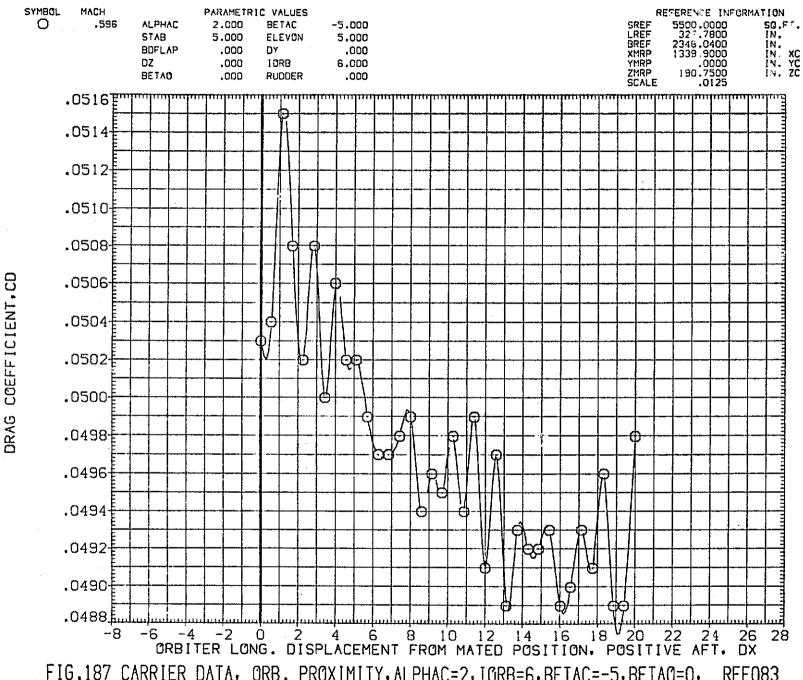
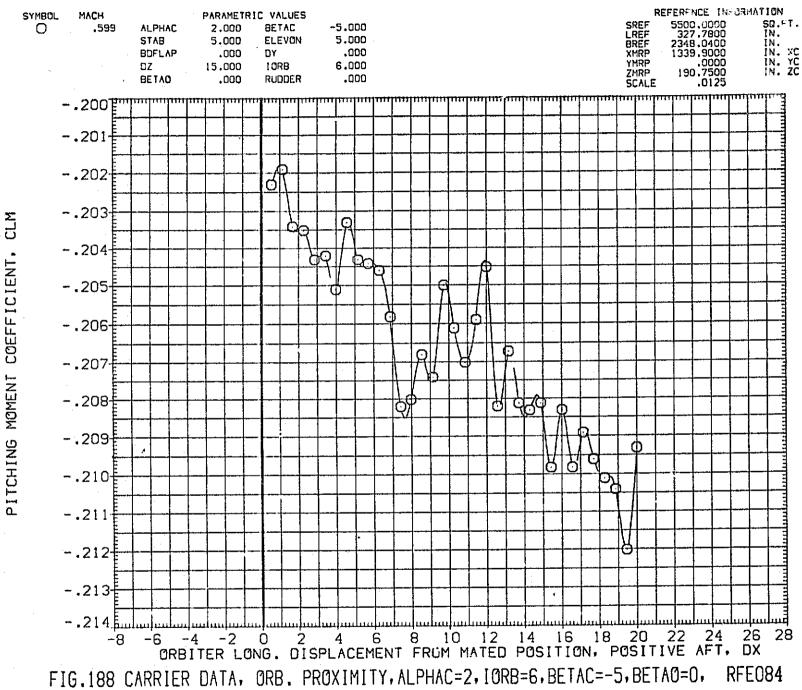


FIG.187 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IGRB=6, BETAC=-5, BETAO=0, RFEO83

FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO84



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FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO84

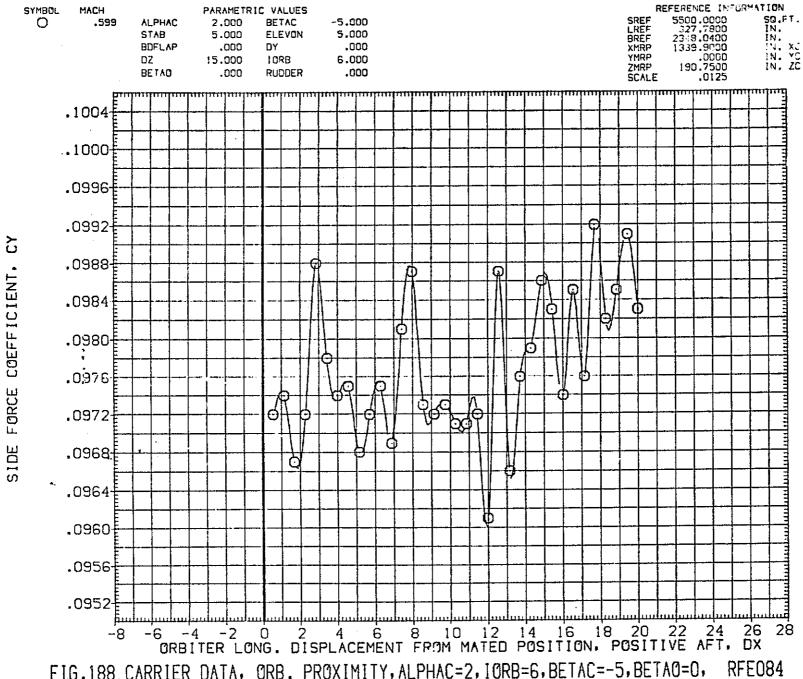


FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO84 PAGE 1476

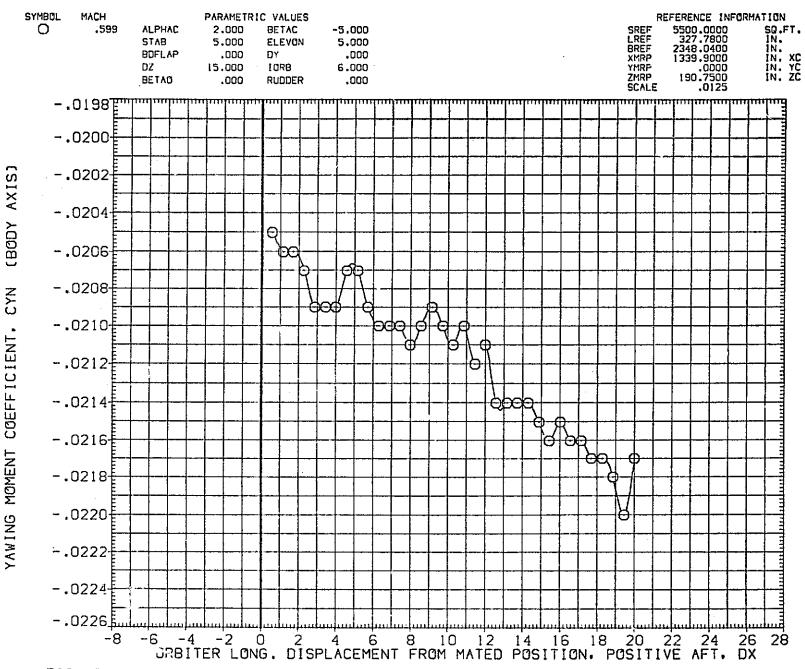


FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO84

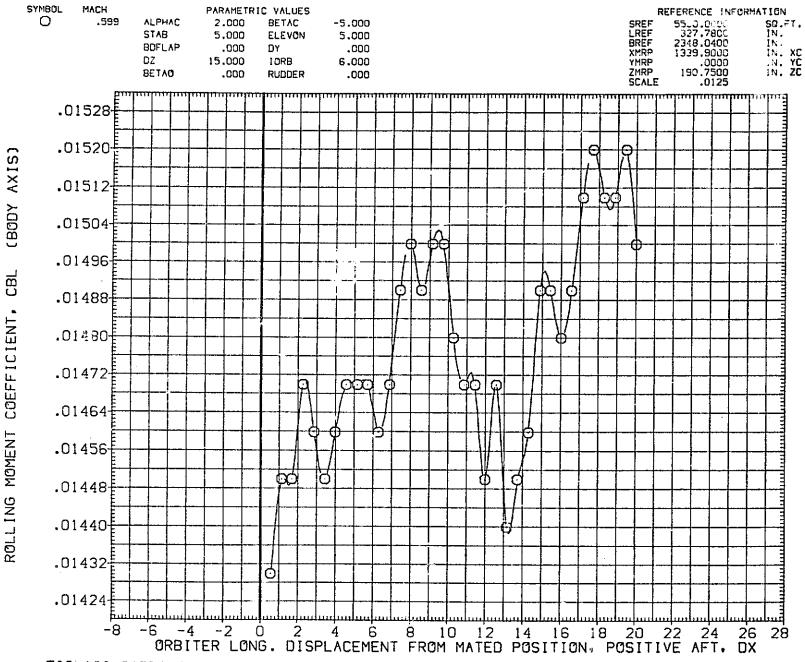


FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO84

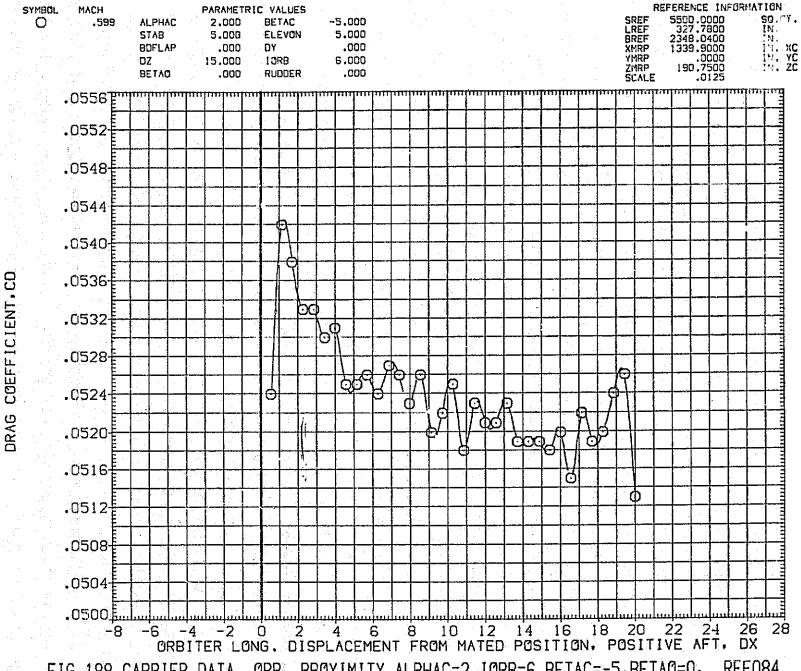
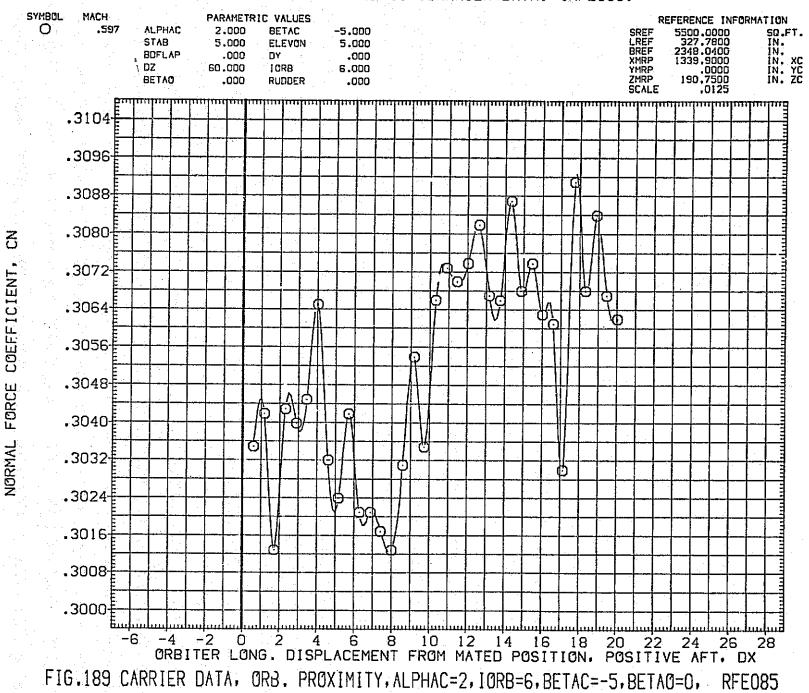


FIG.188 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE084

## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE085)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE085)

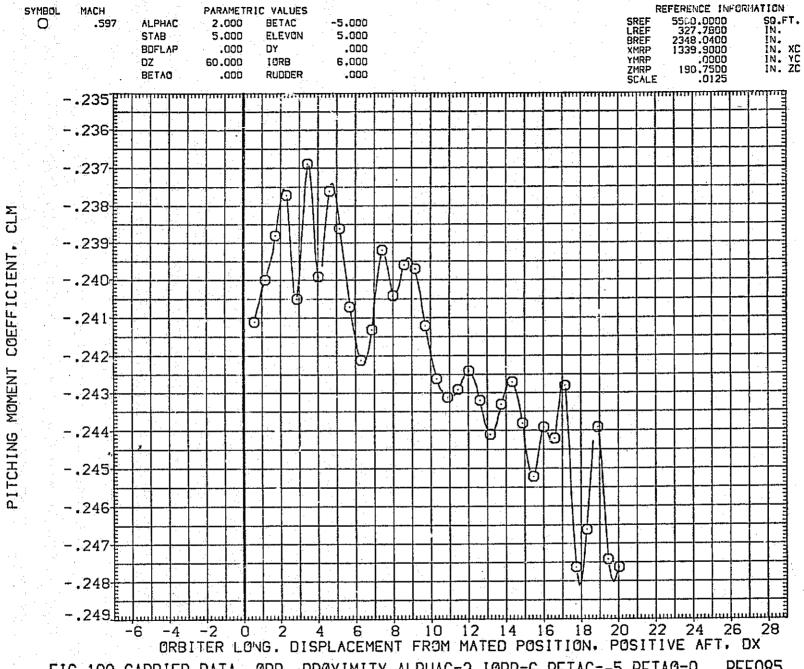
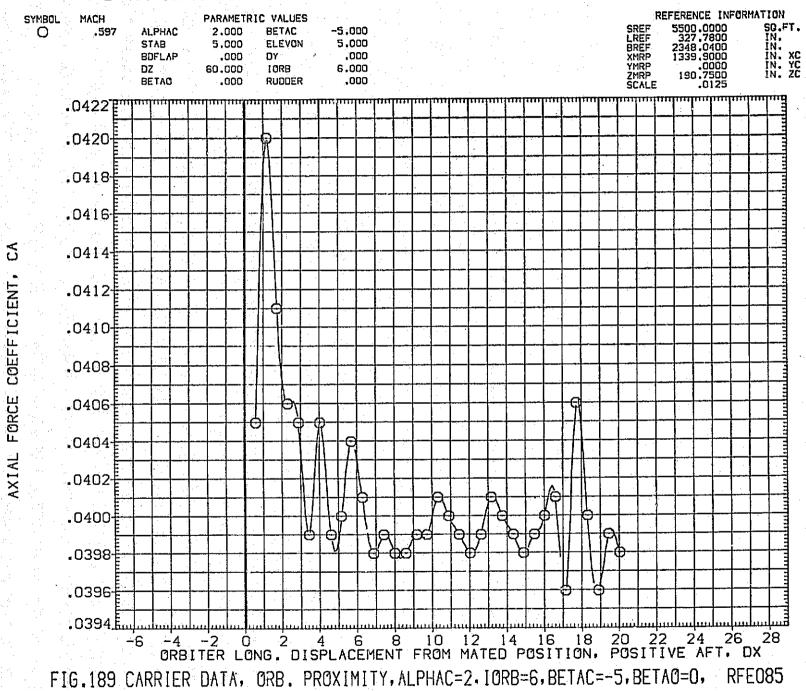


FIG.189 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO85

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE085)



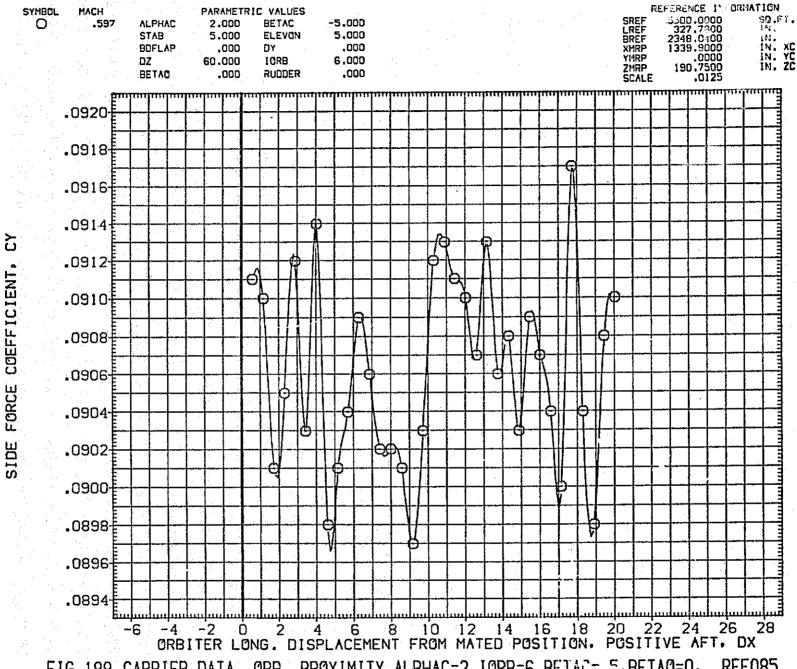
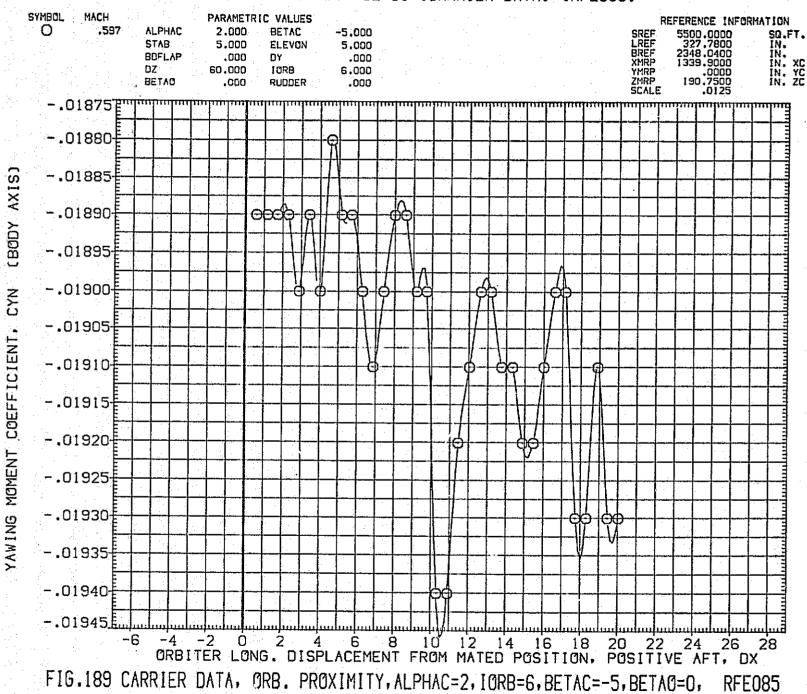


FIG.189 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC= 5, BETAO=0, RFE085

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE085)

V.



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE085)

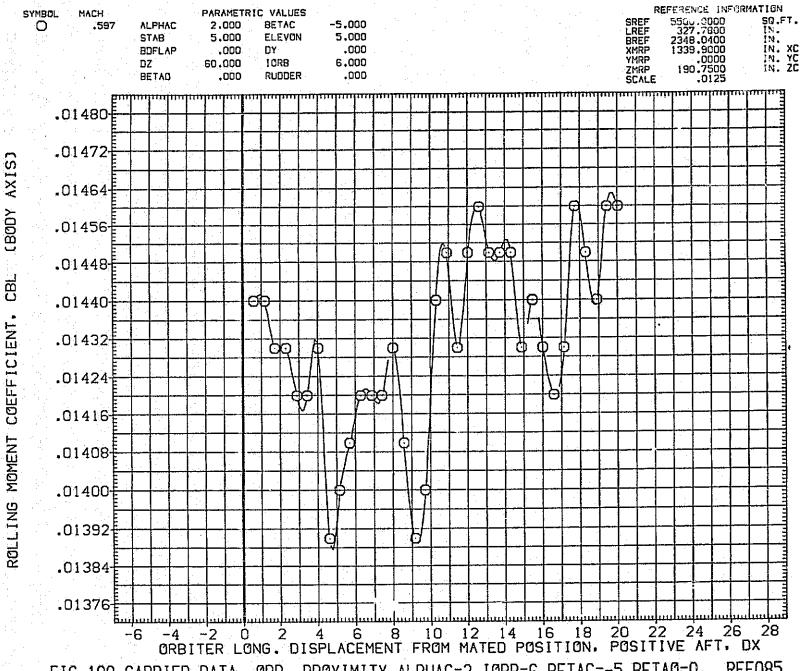
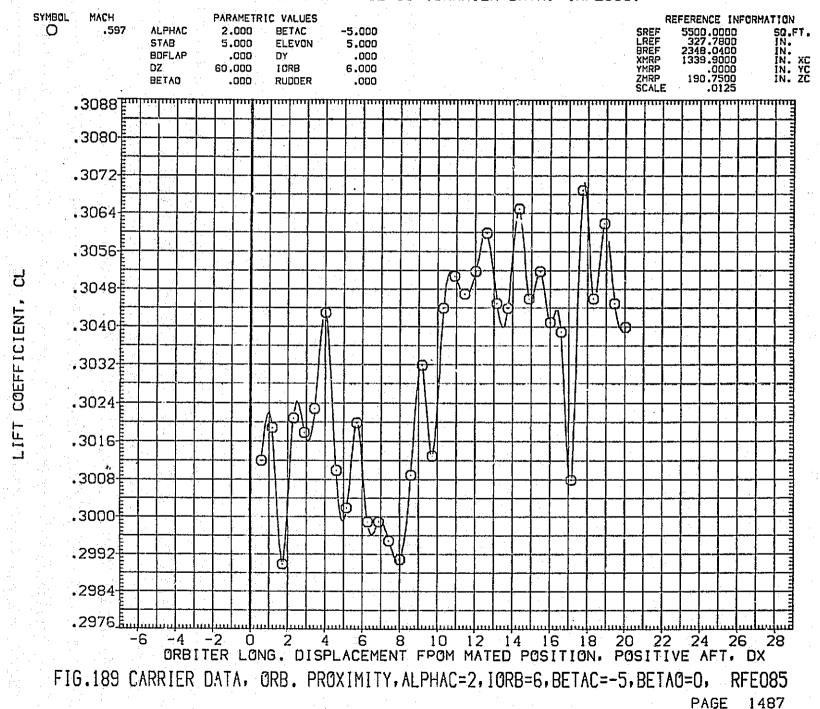


FIG.189 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO85

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE085)



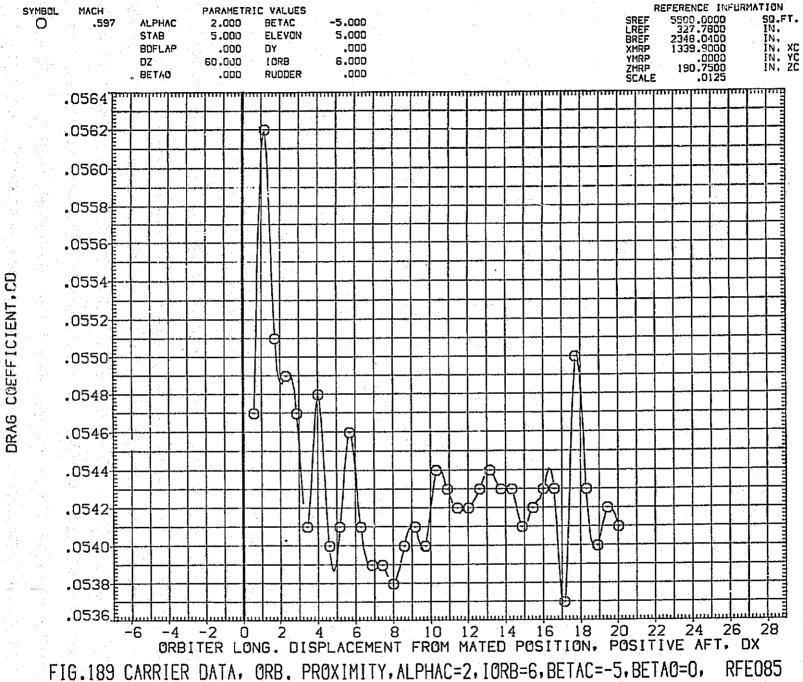
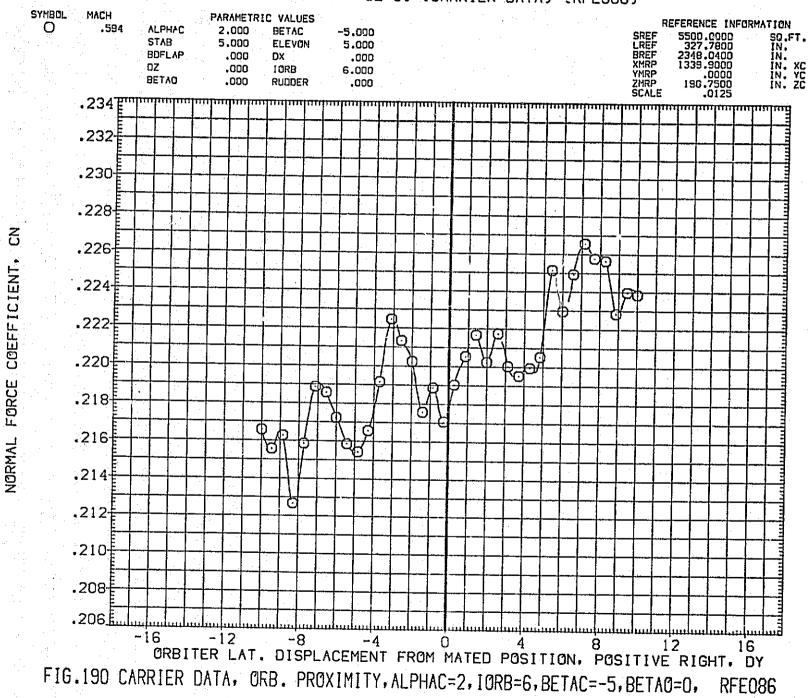


FIG.189 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO85 PAGE 1488

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)

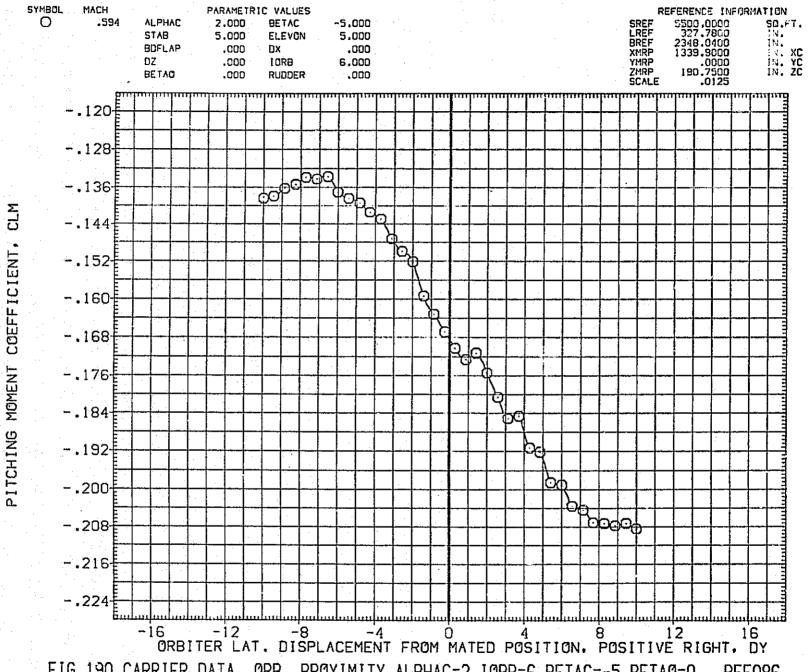
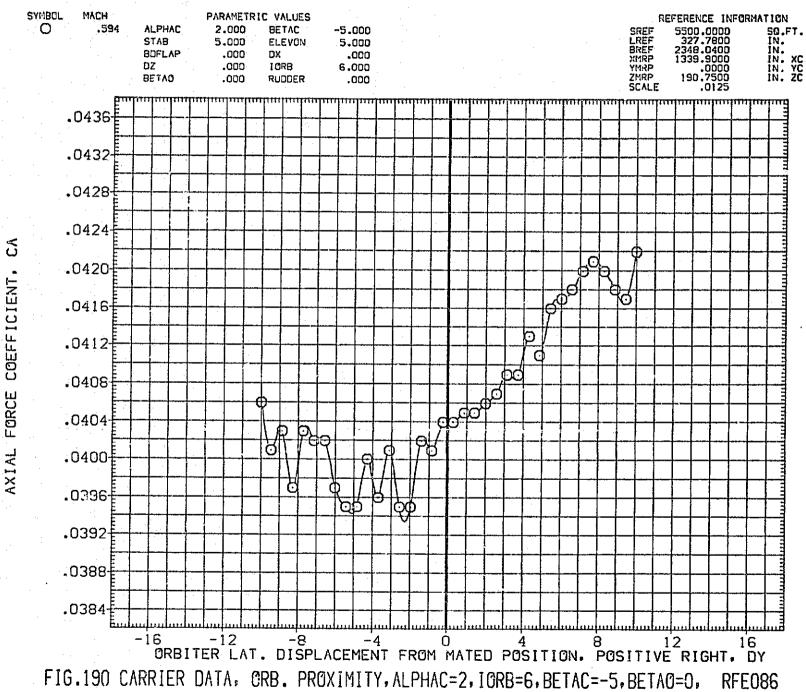


FIG.190 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO86

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)

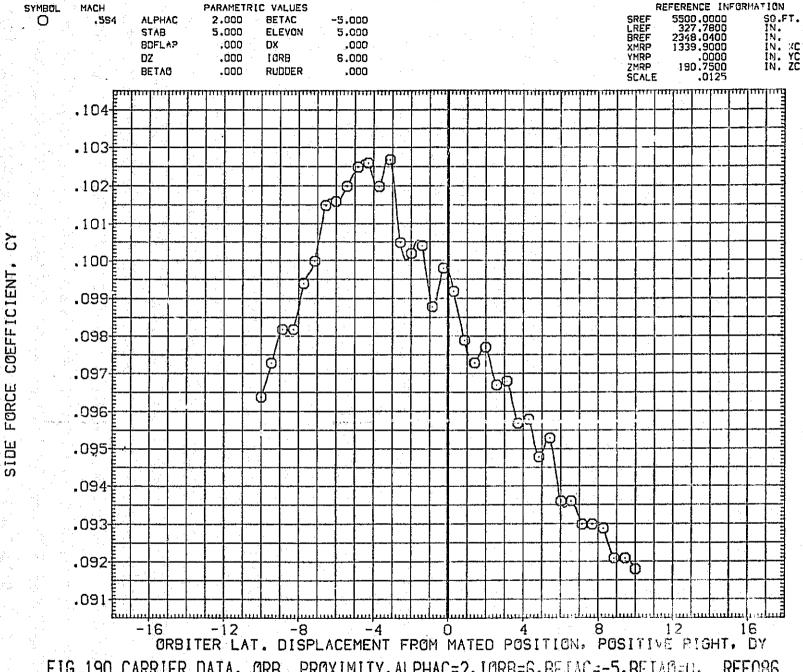
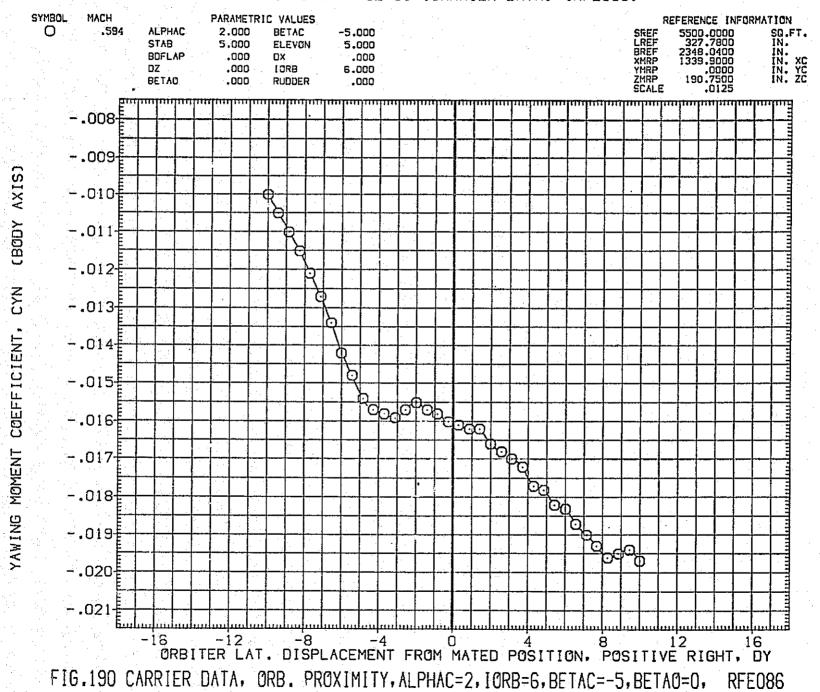


FIG. 190 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAC=U, RFE086

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE086)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)

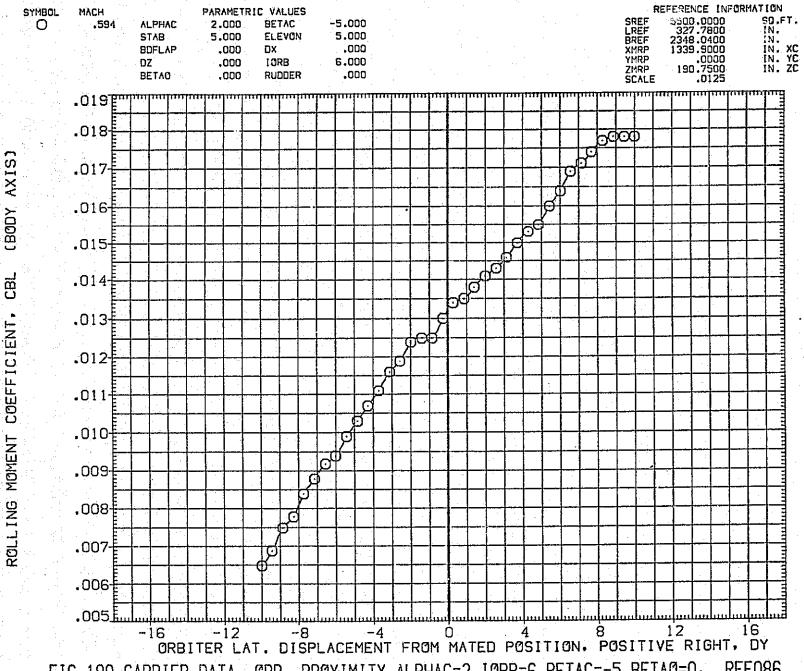
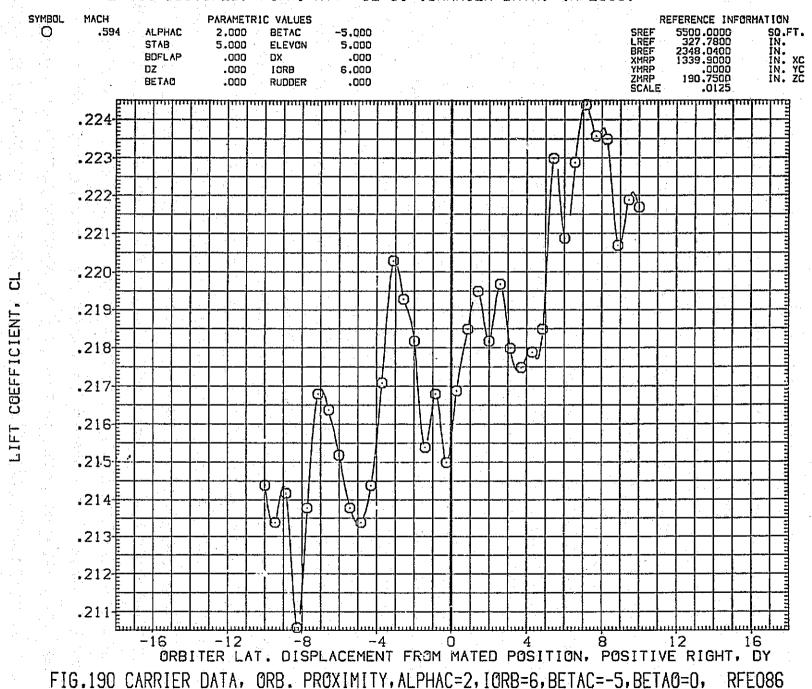


FIG.190 CARRIER DATA, CRB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE086

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE086)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE086)

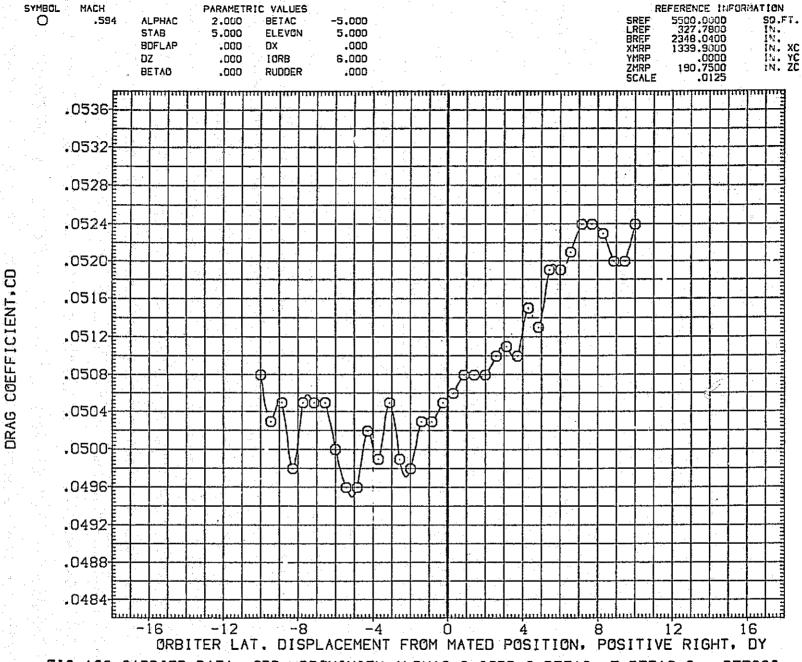


FIG.190 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO86

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE087)

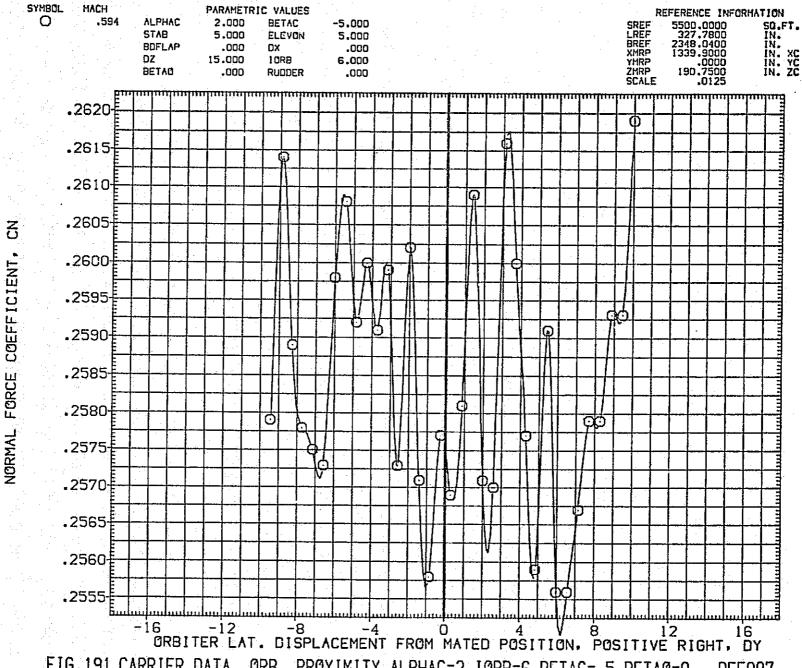
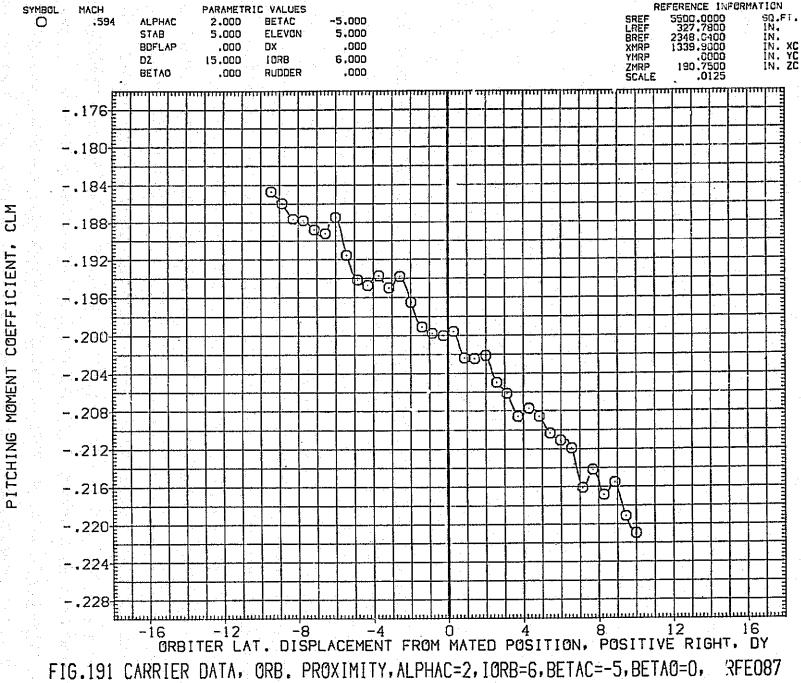


FIG.191 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0.

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE087)



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## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE087)

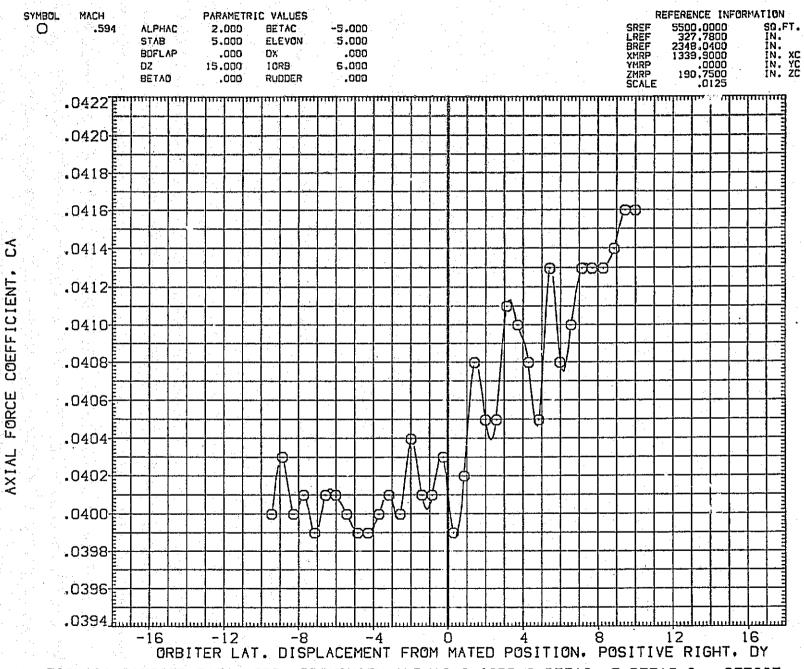


FIG.191 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO87

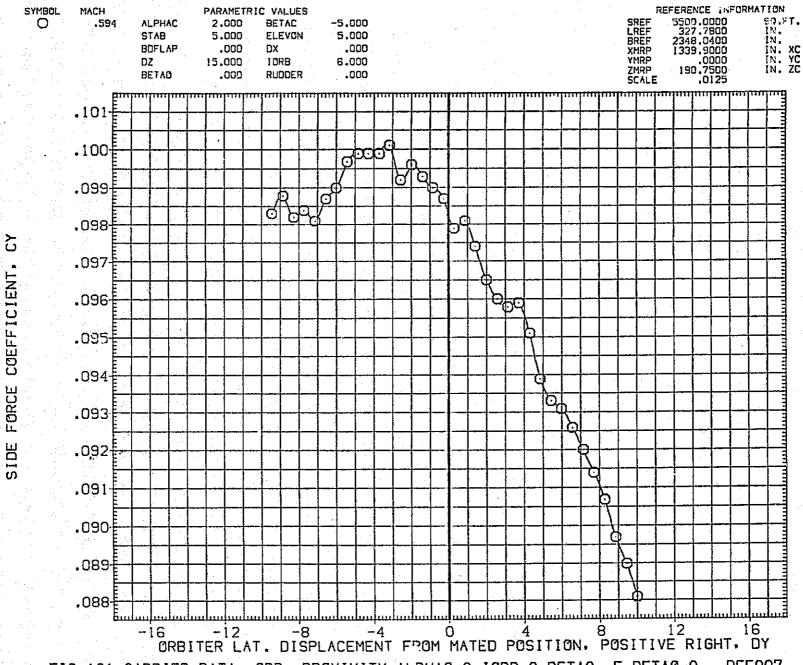
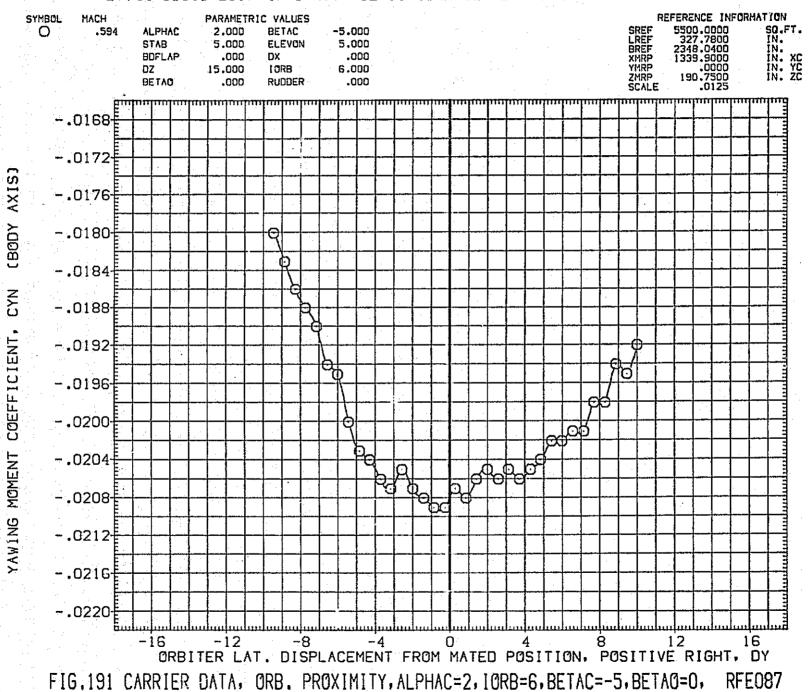


FIG.191 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO87

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE087)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE087)

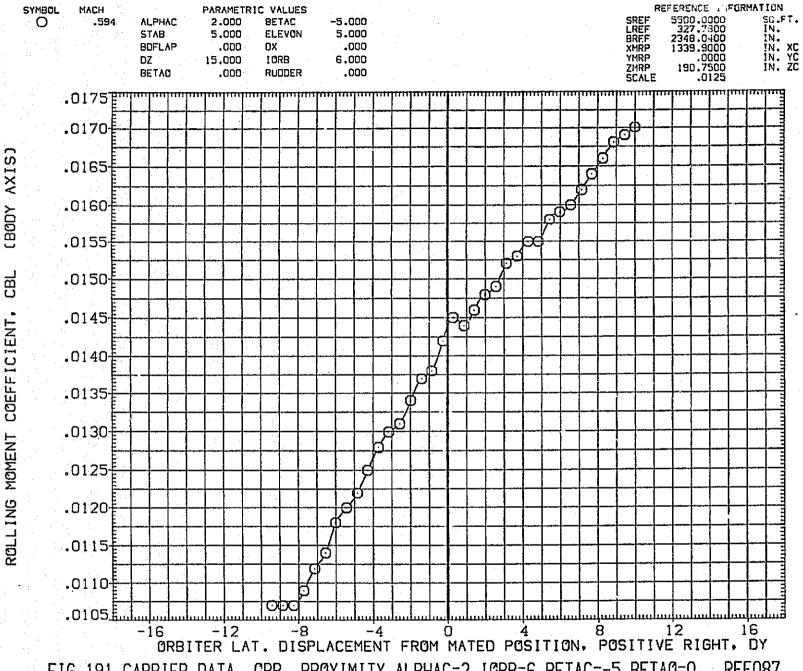


FIG.191 CARRIER DATA, CRB. PROXIMITY, ALPHAC=2, 10RB=6, BETAC=-5, BETAC=0, RFE087

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE087)

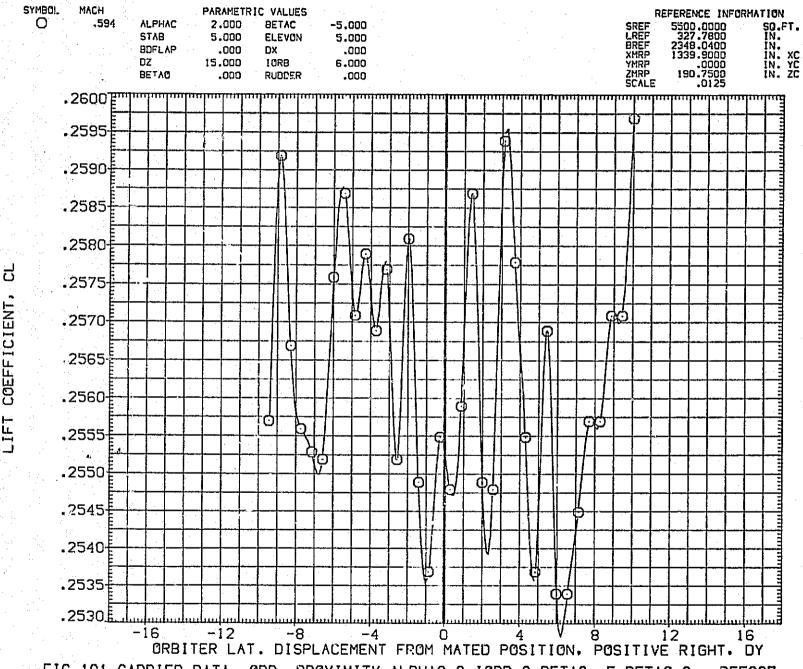


FIG.191 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO87

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE087)

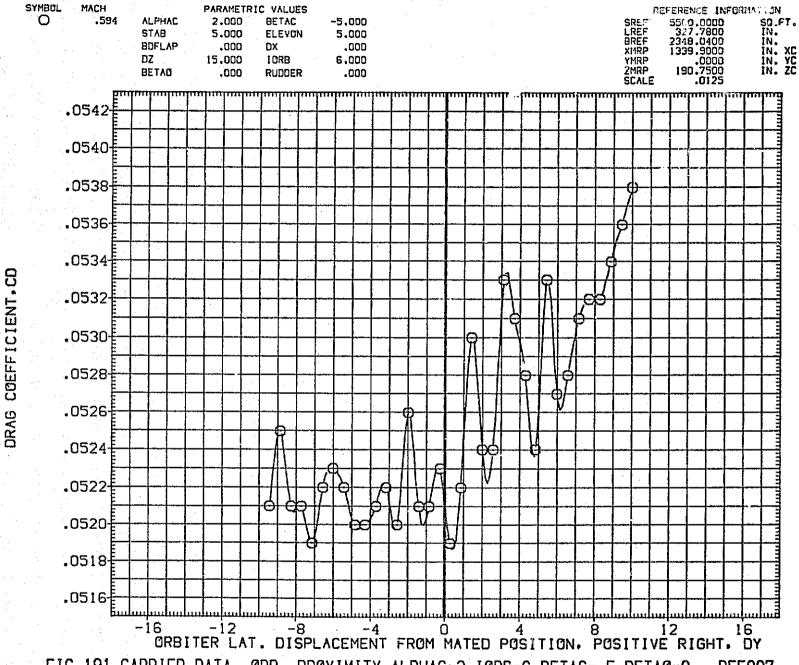
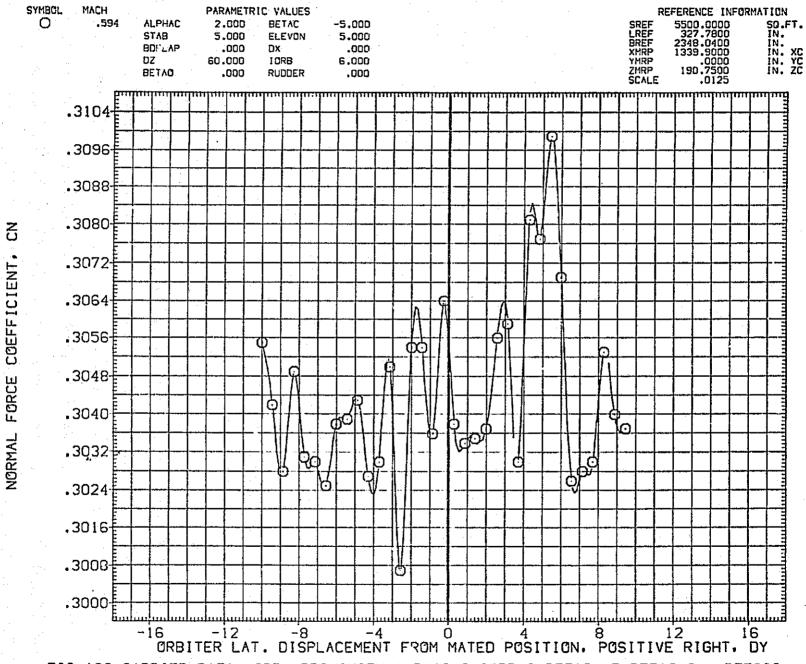


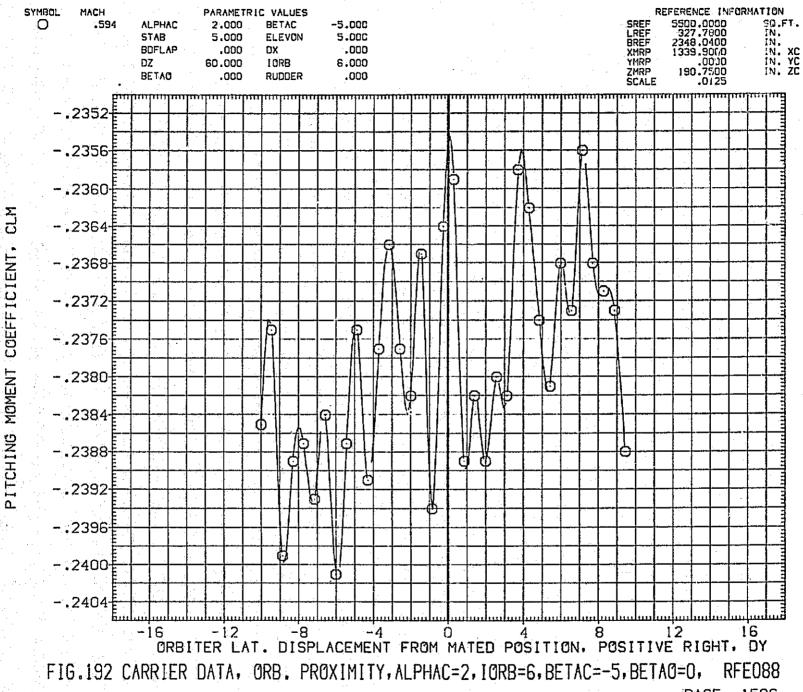
FIG.191 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFEO87

## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE088)



FIC.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAC=0, RFE088

L:V44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE088)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE088)

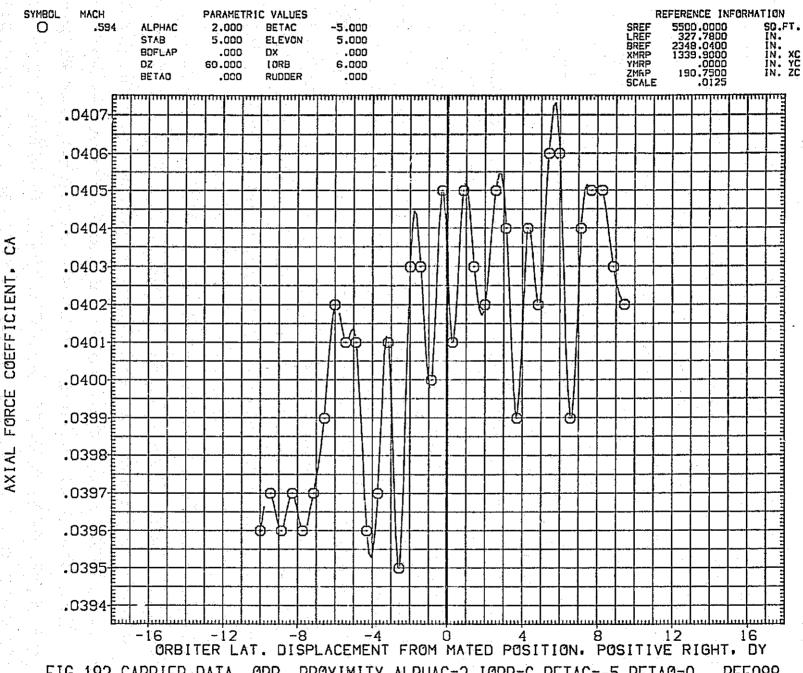


FIG.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE088

LTV44-559(CA28) 747/1 ATY 02 S1 (CARRIER DATA) (RFE088)

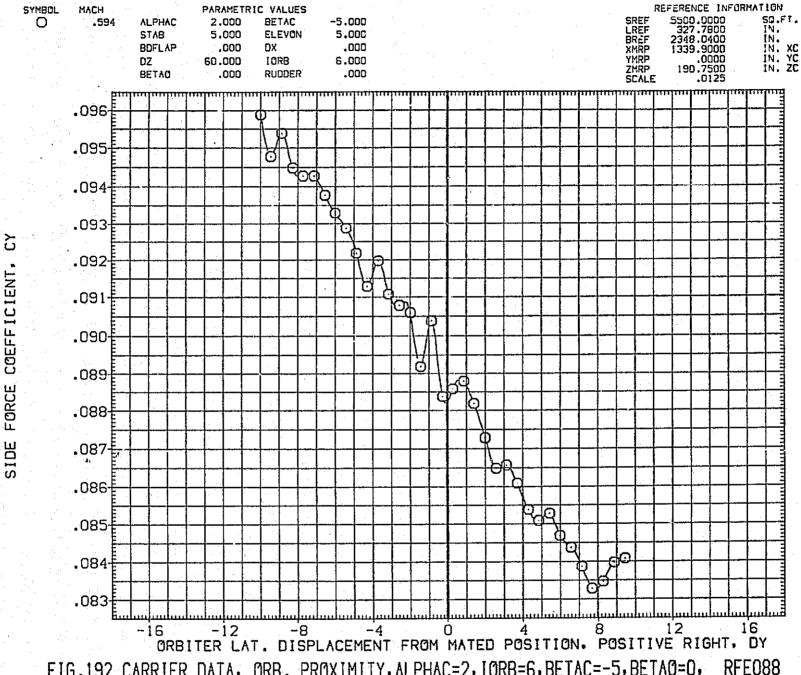


FIG.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, PAGE 1508

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE088)

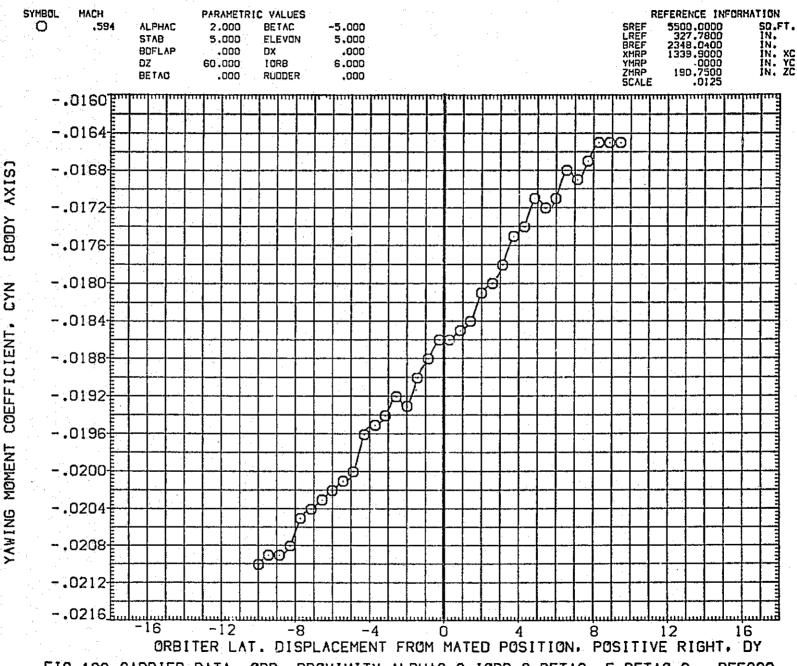


FIG.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE088

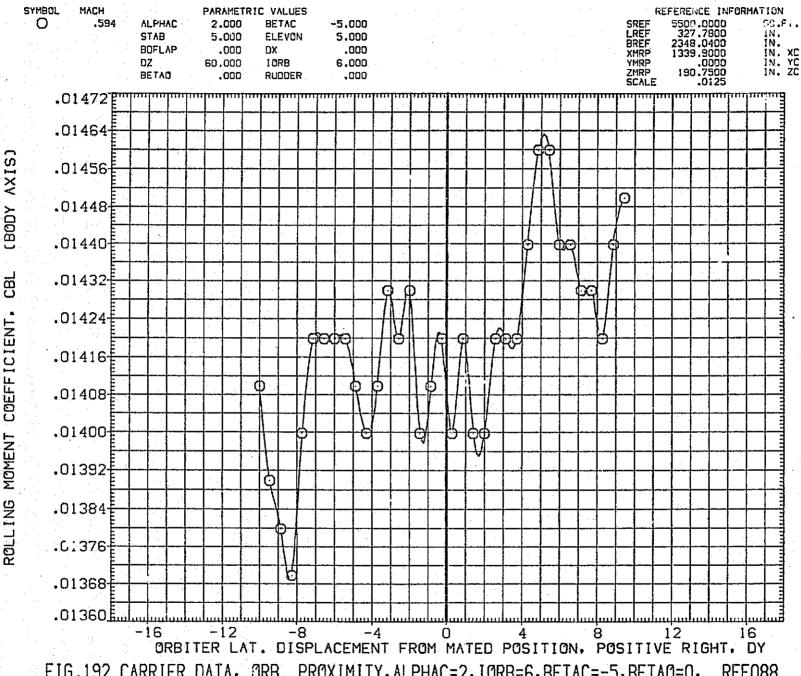
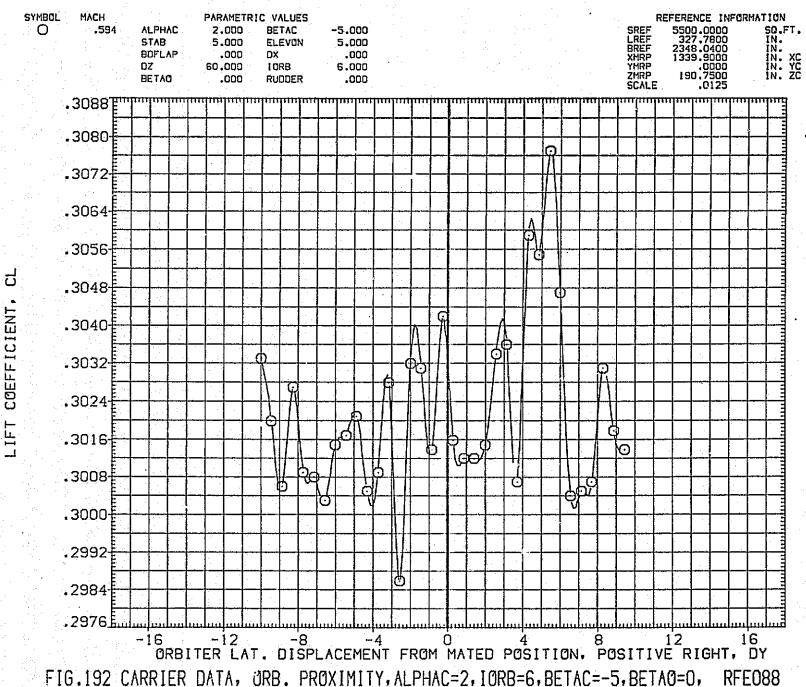


FIG.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE088 PAGE 1510

## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE088)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE088)

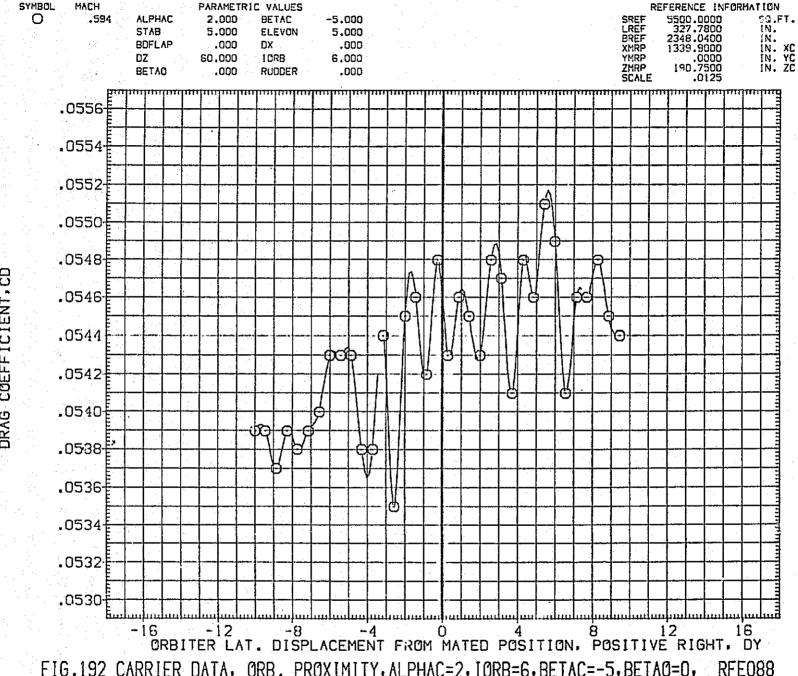


FIG.192 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, RFE088 PAGE 1512

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)

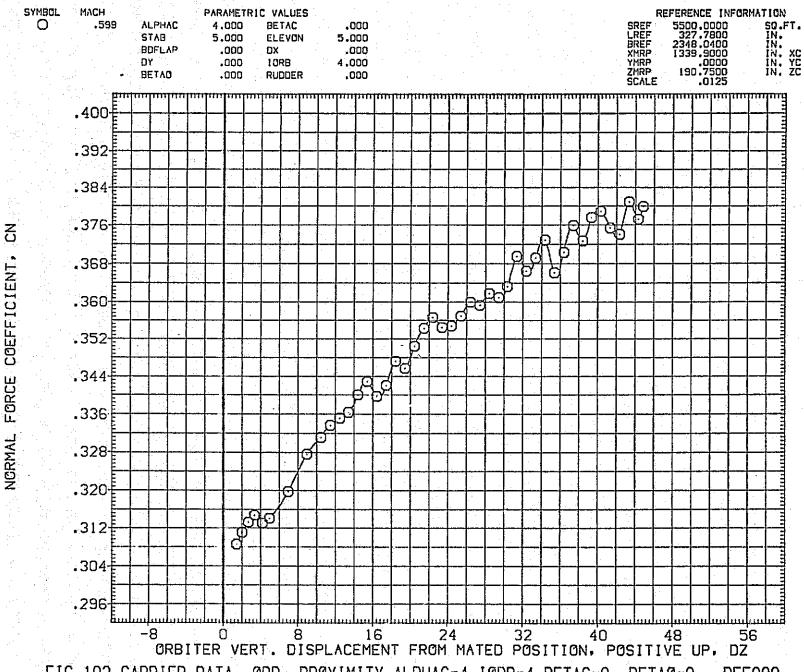


FIG.193 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, [ORB=4, BETAC=0, BETAO=0, RFE089

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)

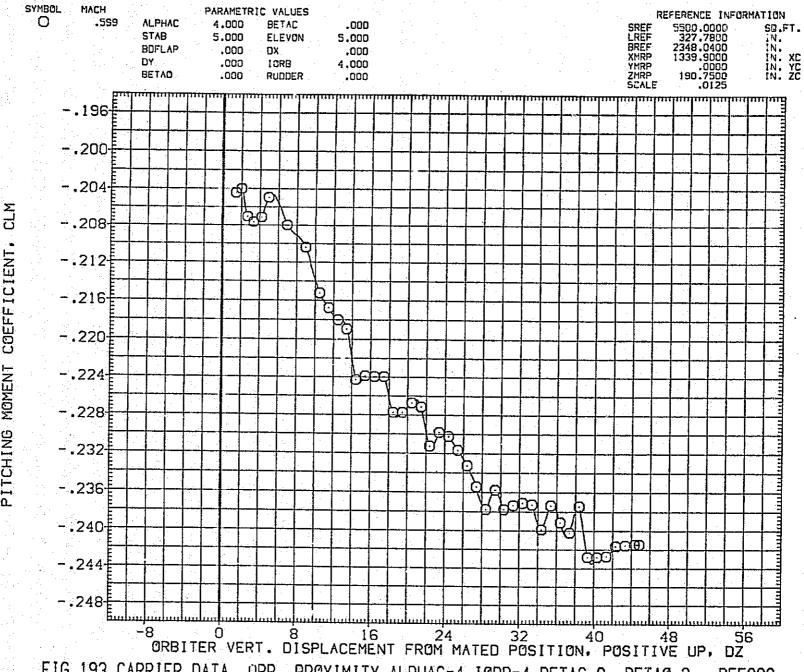


FIG.193 CARRIER DATA, URB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE089
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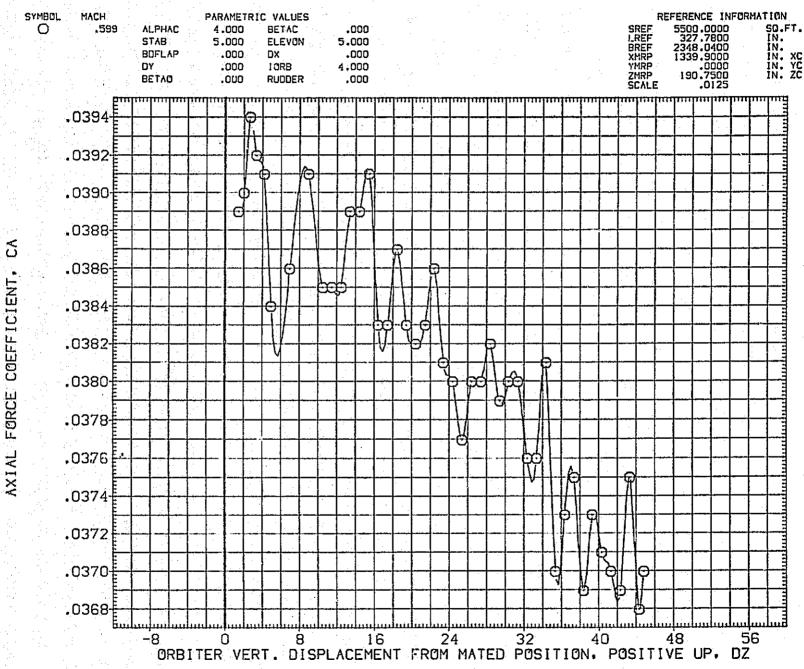


FIG.193 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO89

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)

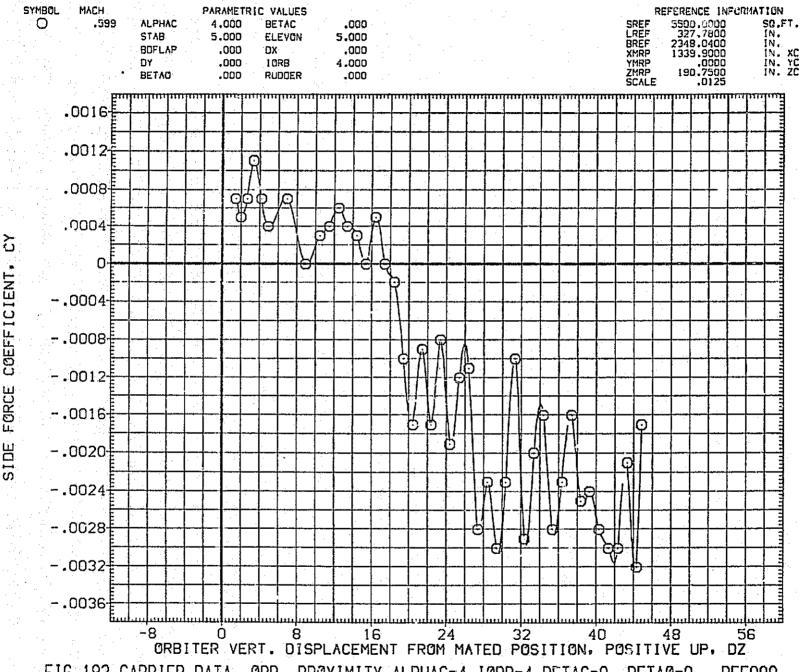
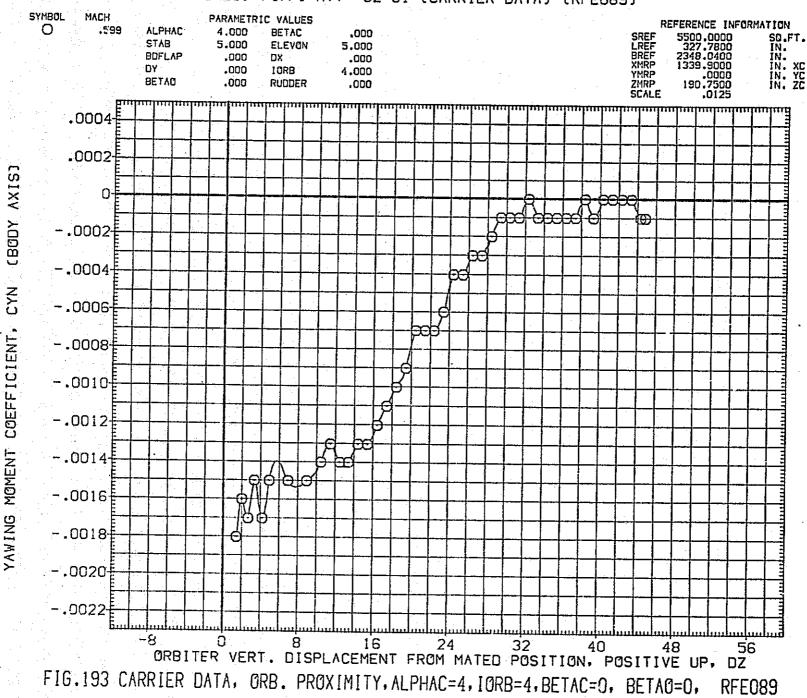
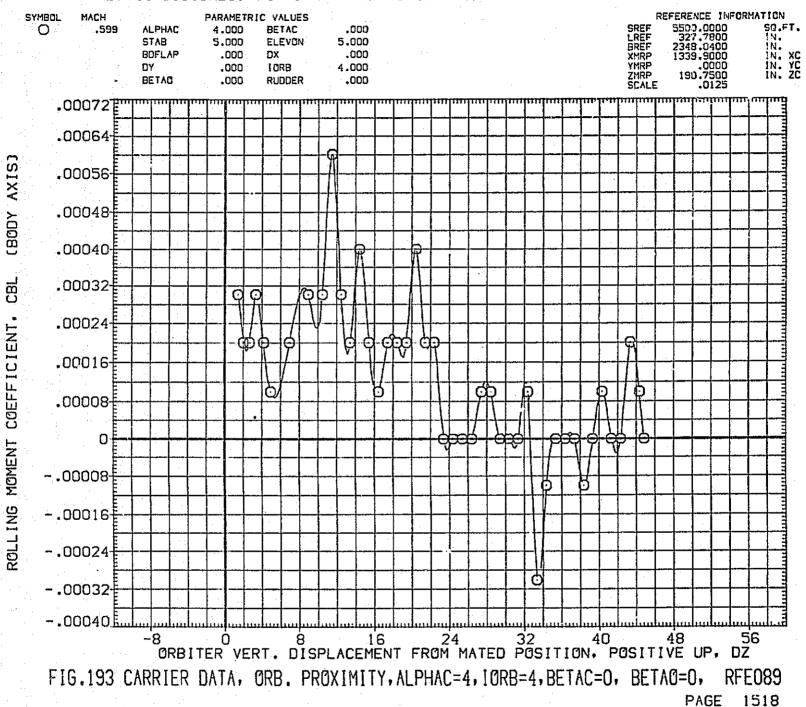


FIG.193 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO89

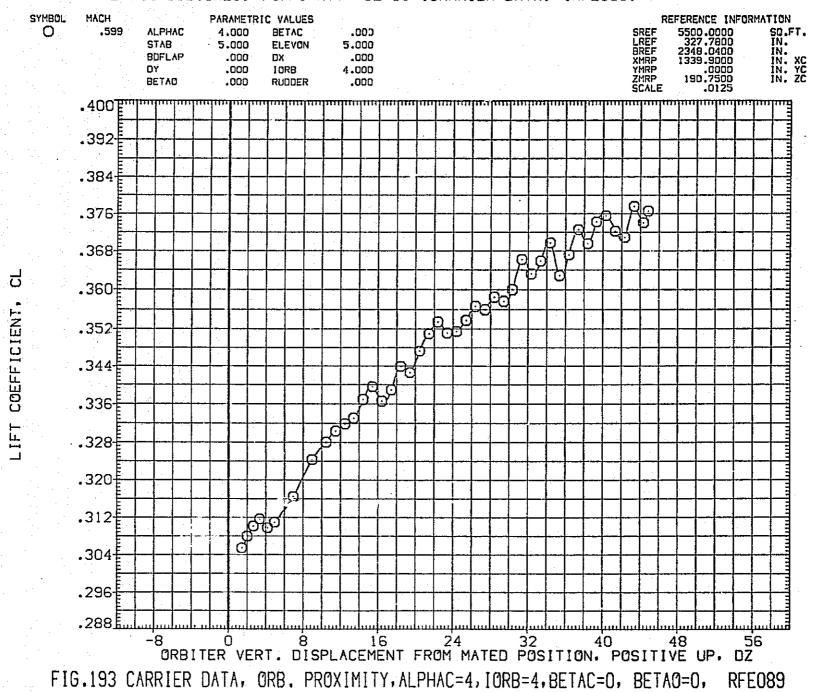
LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE089)

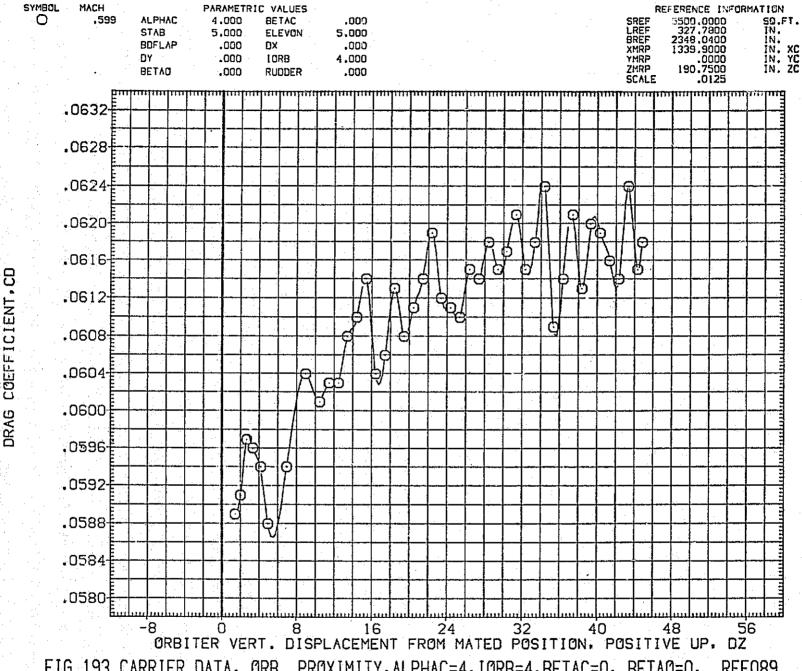
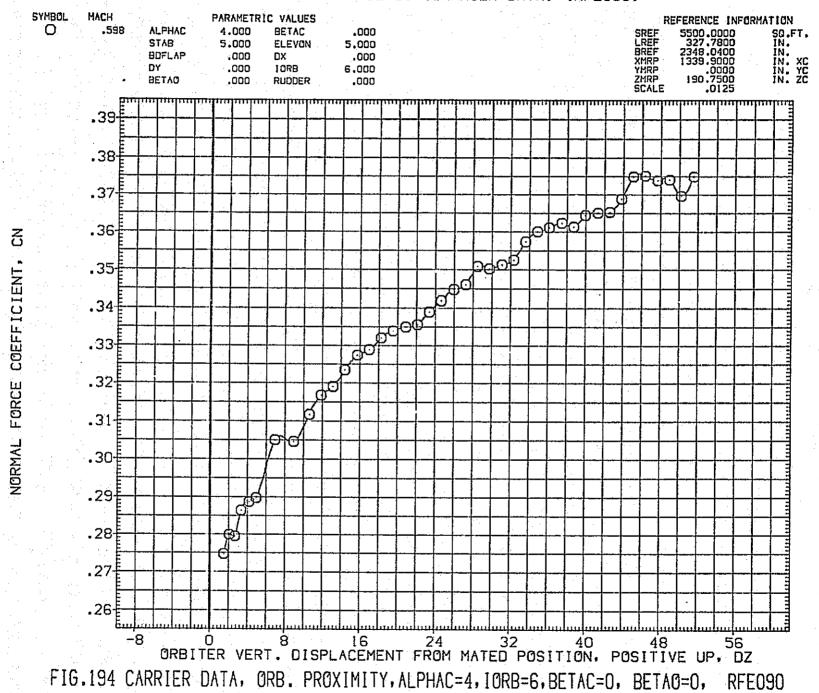


FIG.193 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO89 PAGE 1520

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE090)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE090)

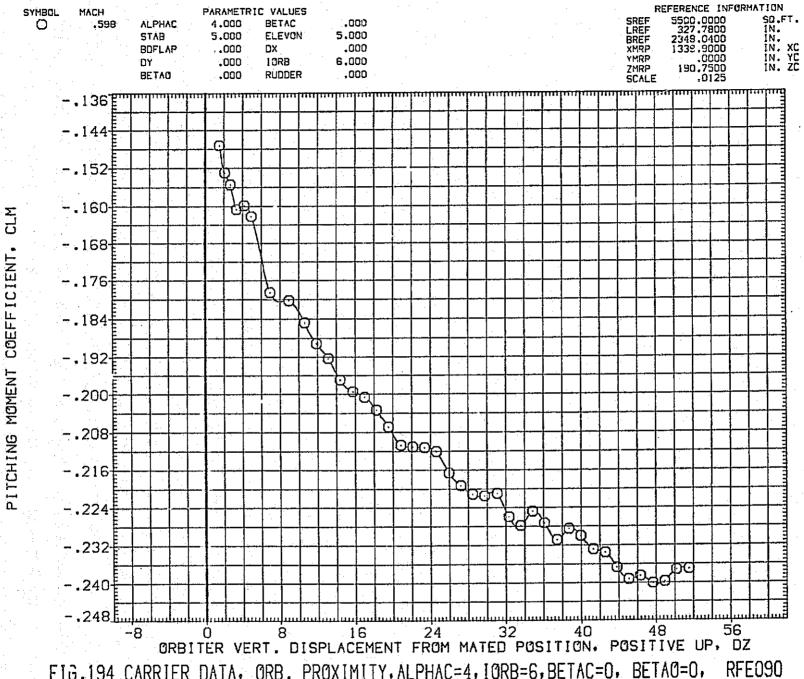


FIG.194 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO90 PAGE 1522

FIG.194 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEC90

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE090)

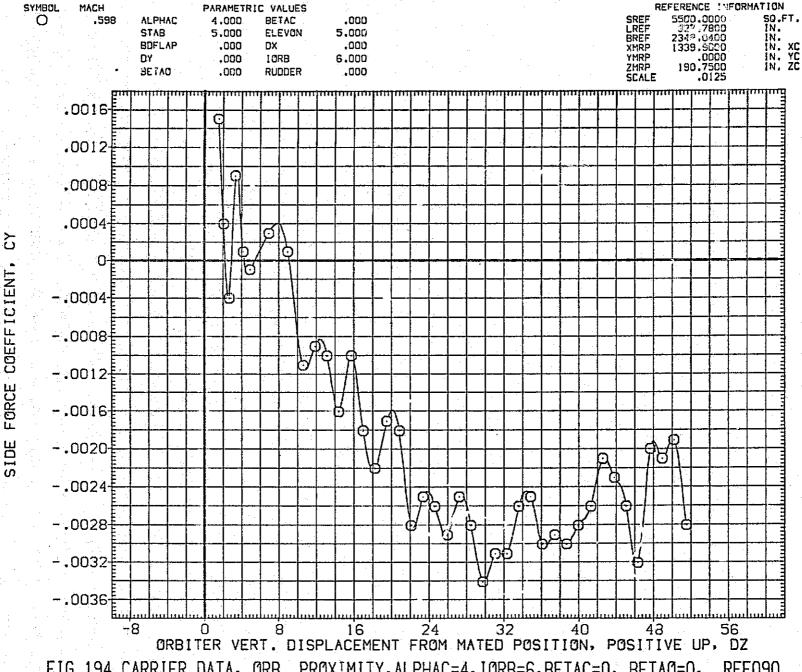
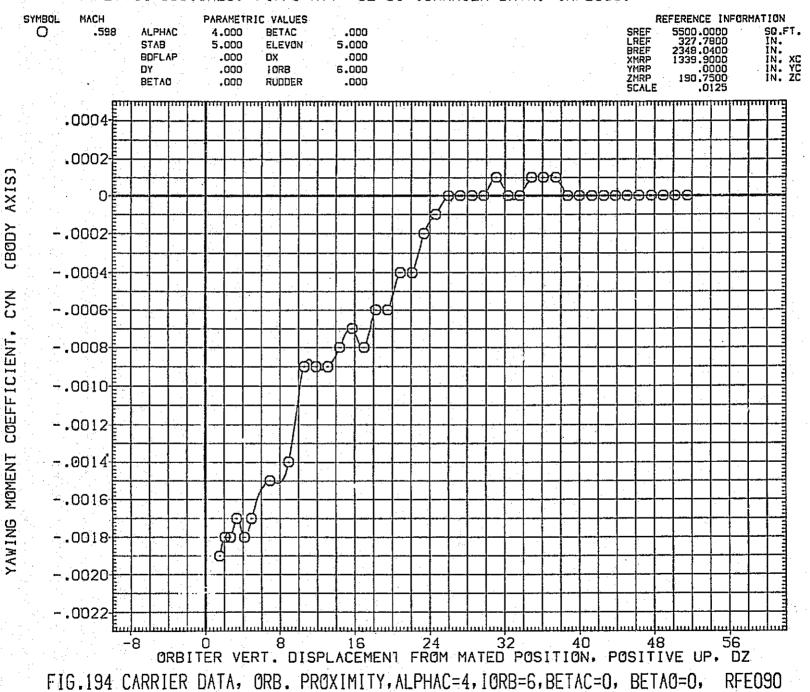
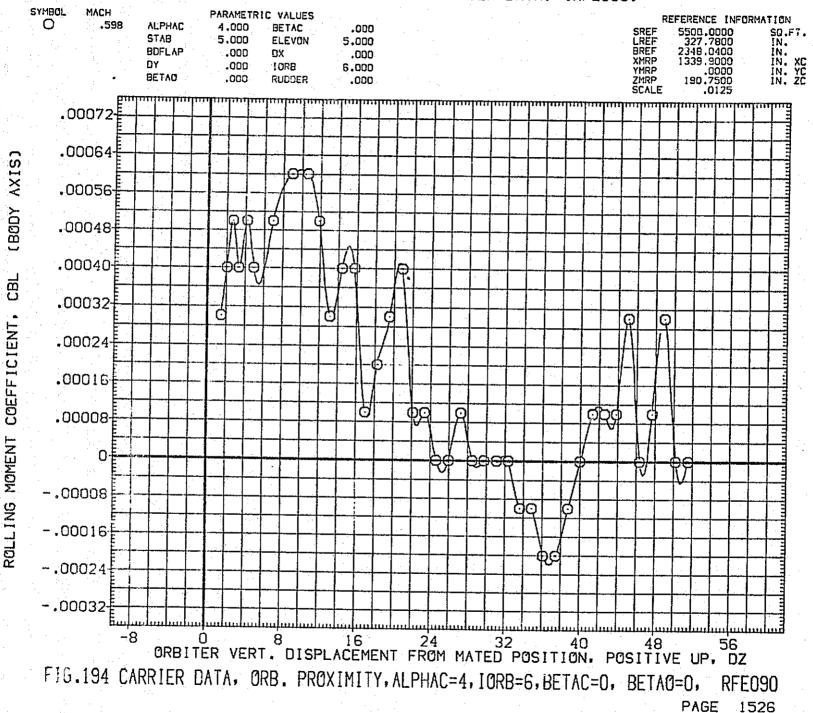


FIG.194 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO90

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE090)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE090)



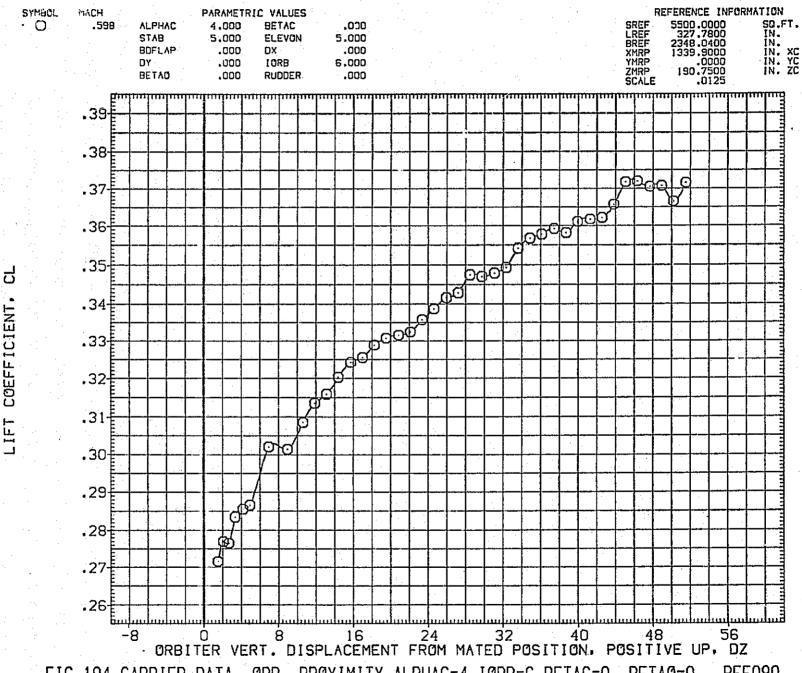
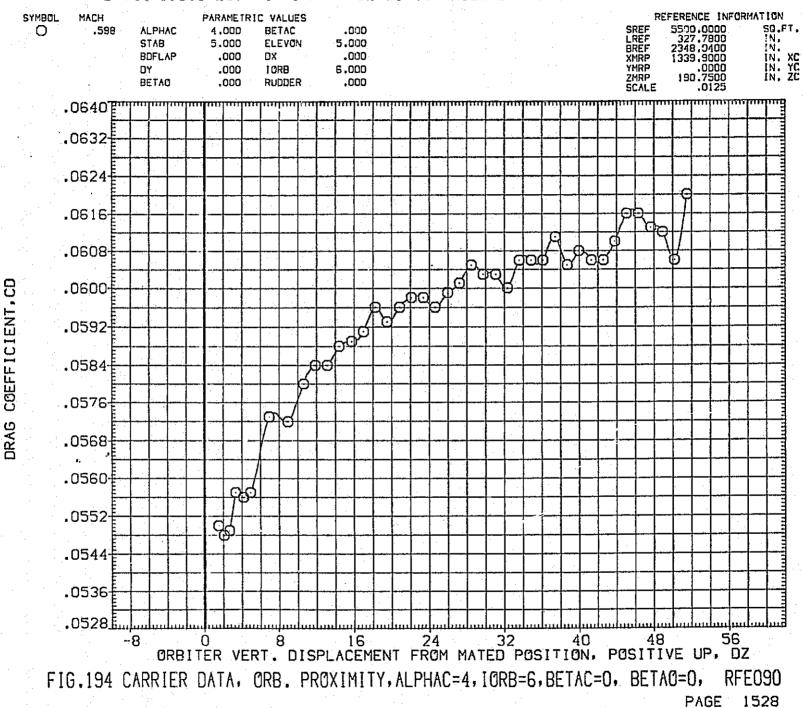


FIG.194 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO90
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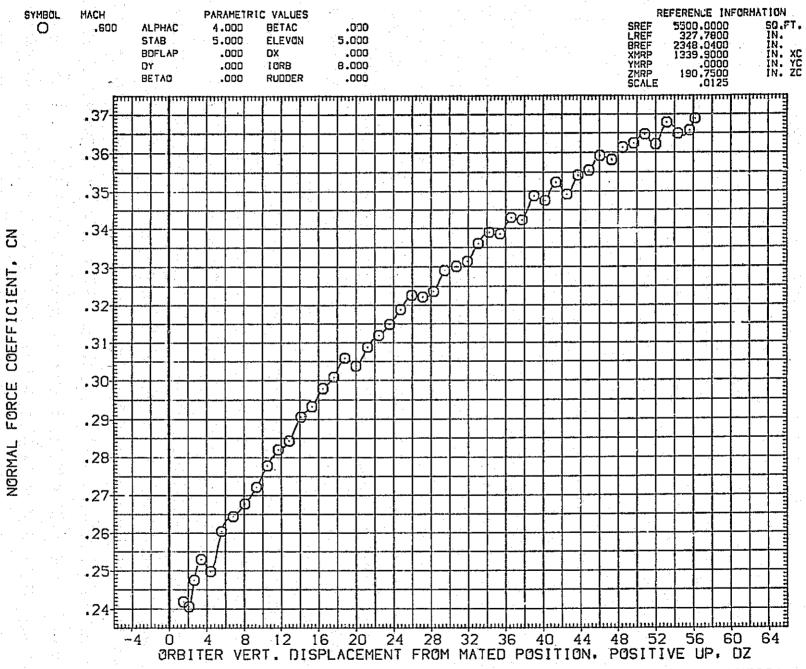


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91

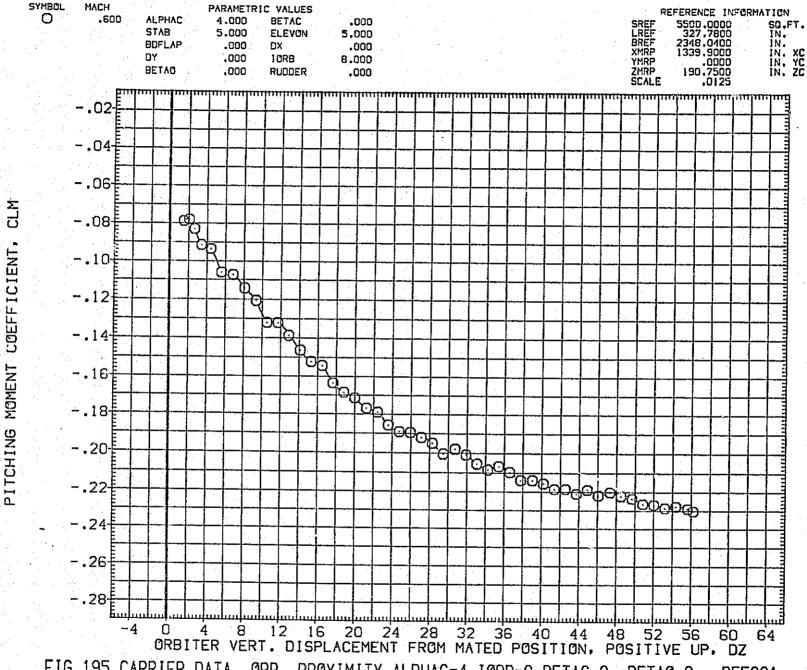


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE091)

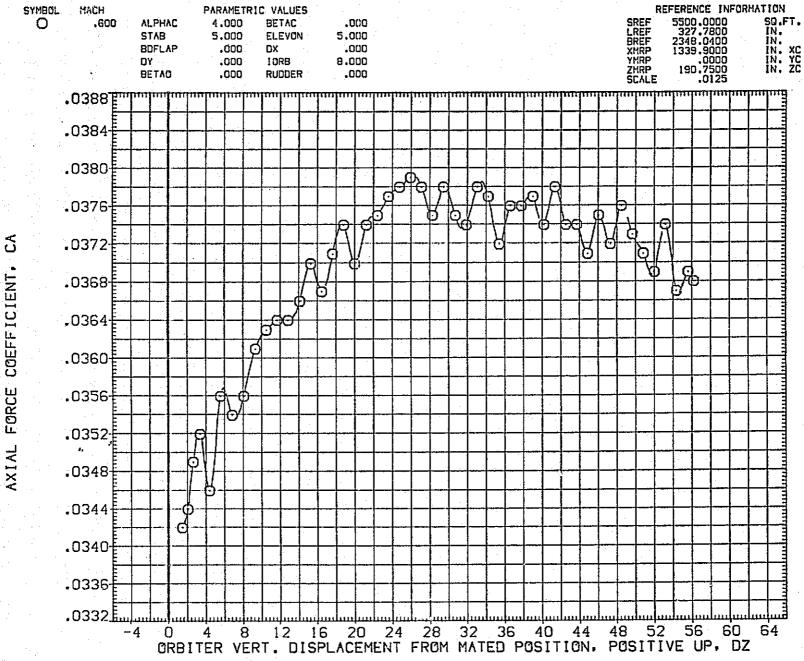


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91

## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE091)

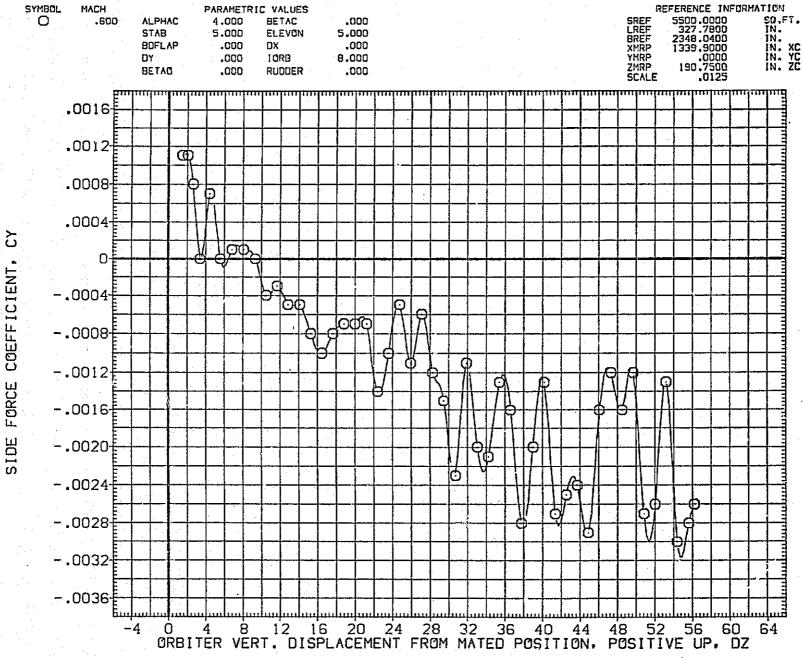


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE091)

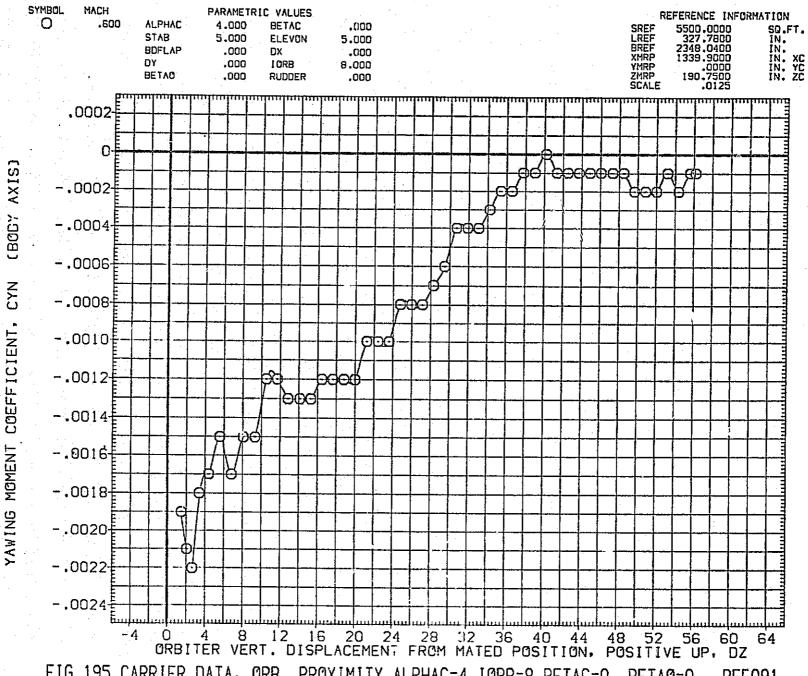


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91

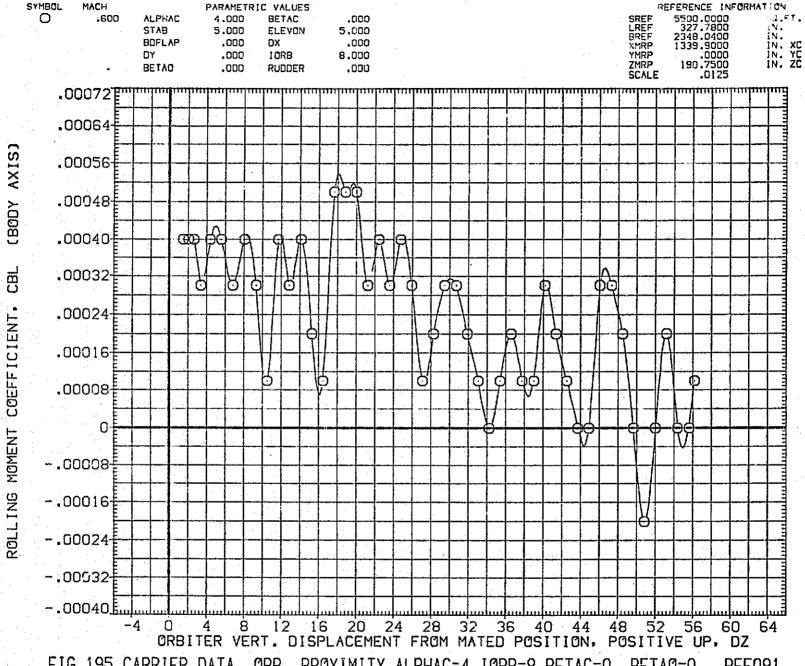


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91
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LTV44-559(CA26) 747/1 ATY 02 S! (CARRIER DATA) (RFE091)

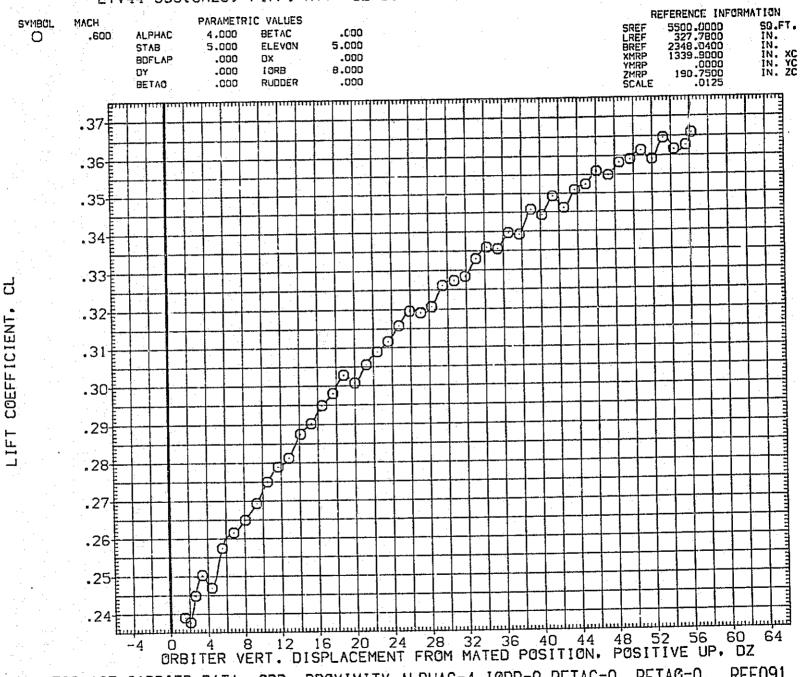
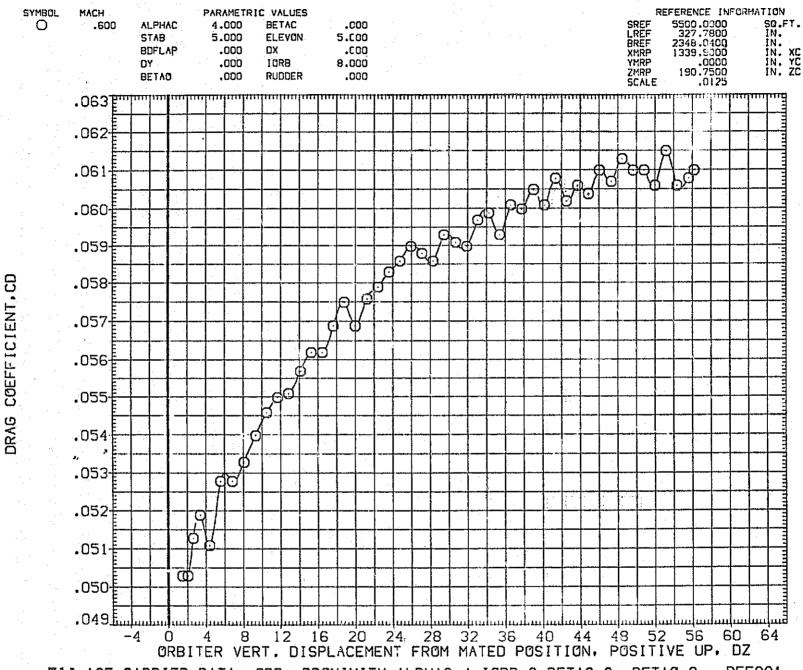


FIG.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAG=0, RFE091



F16.195 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO91

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE092)

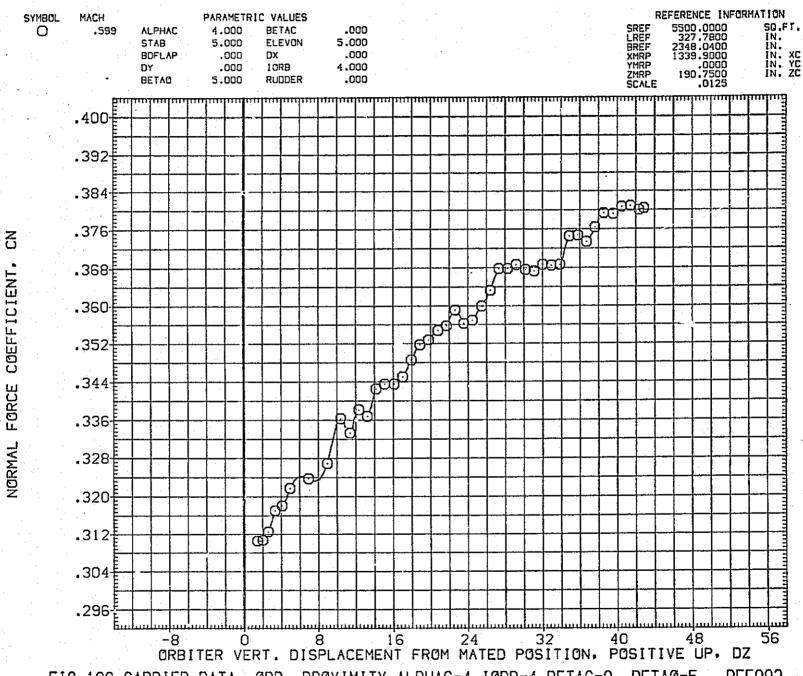
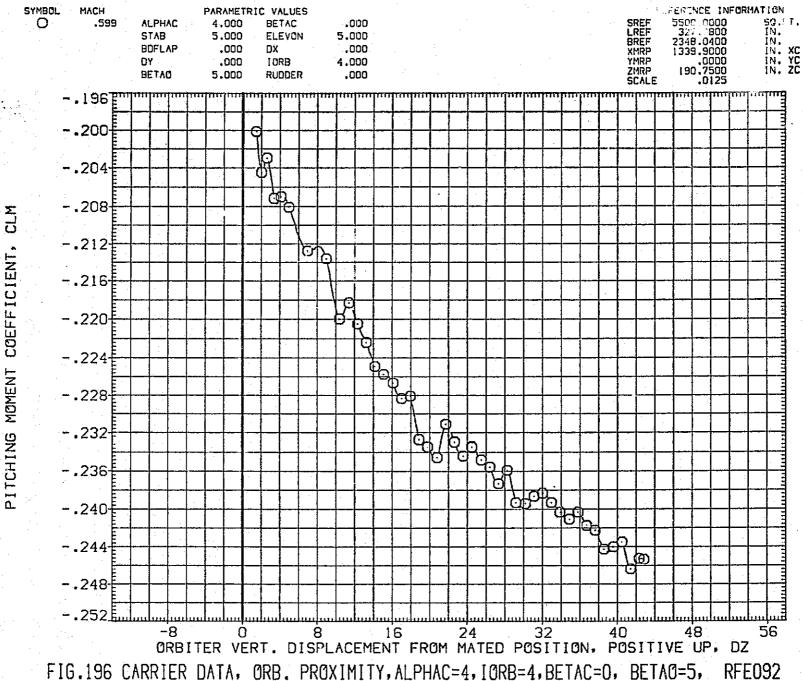


FIG.196 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=5, RFEO92

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE092)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE092)

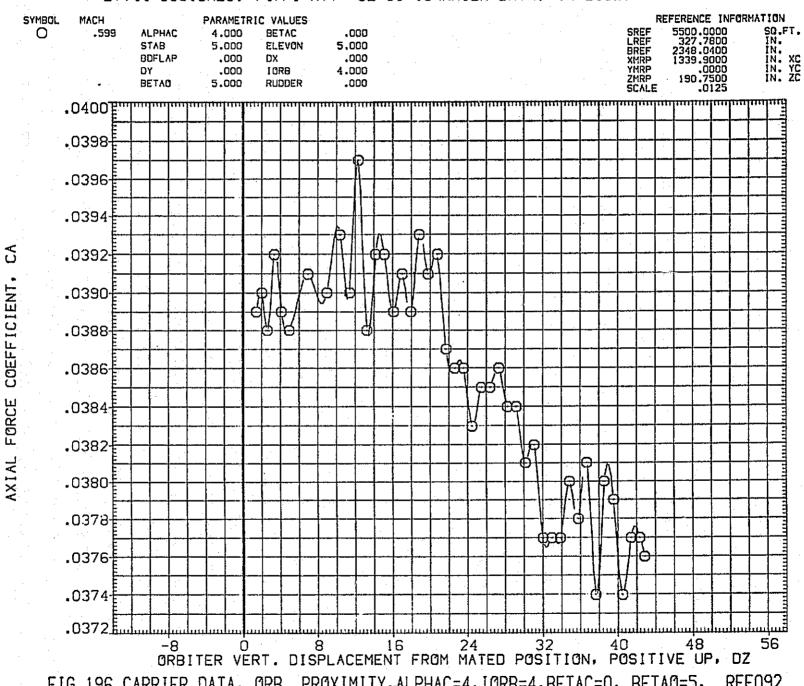


FIG.196 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=5, RFEO92

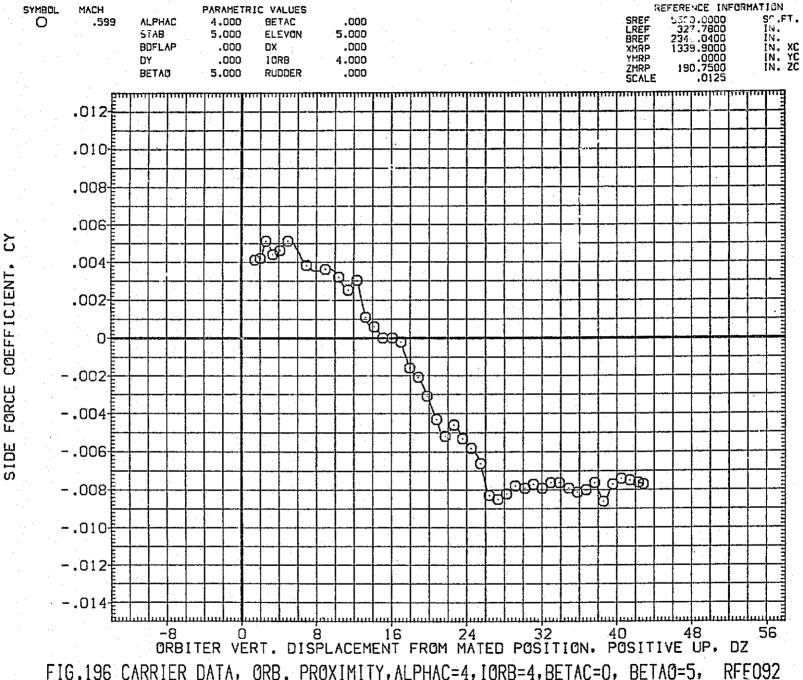


FIG.196 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=5, RFEO92 1540 PAGE

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE092)

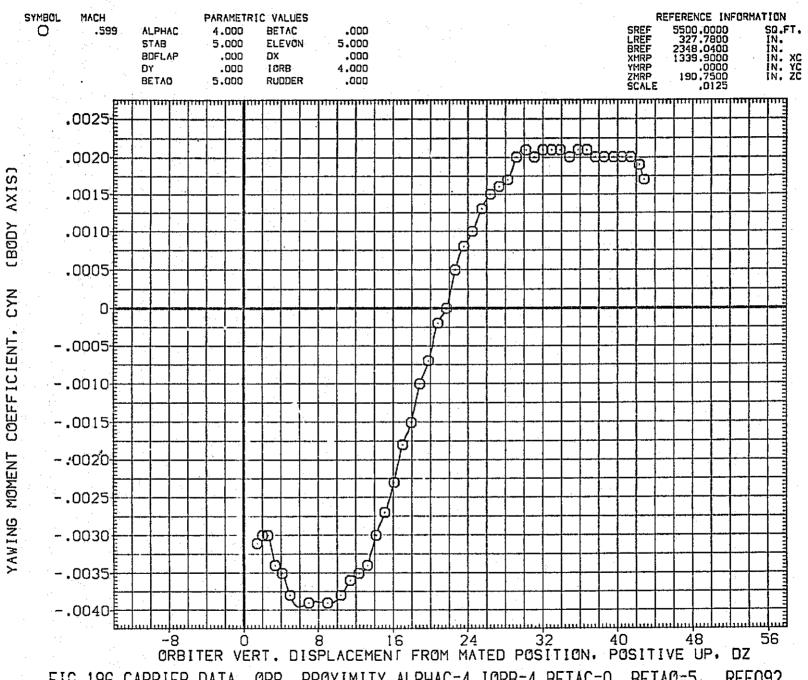
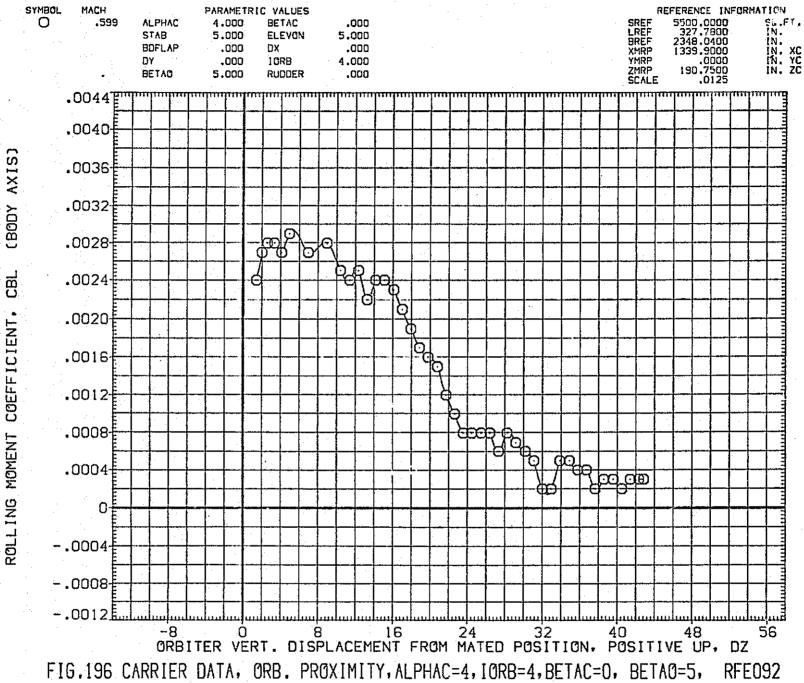


FIG. 196 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=5, RFEO92

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE092)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE092)

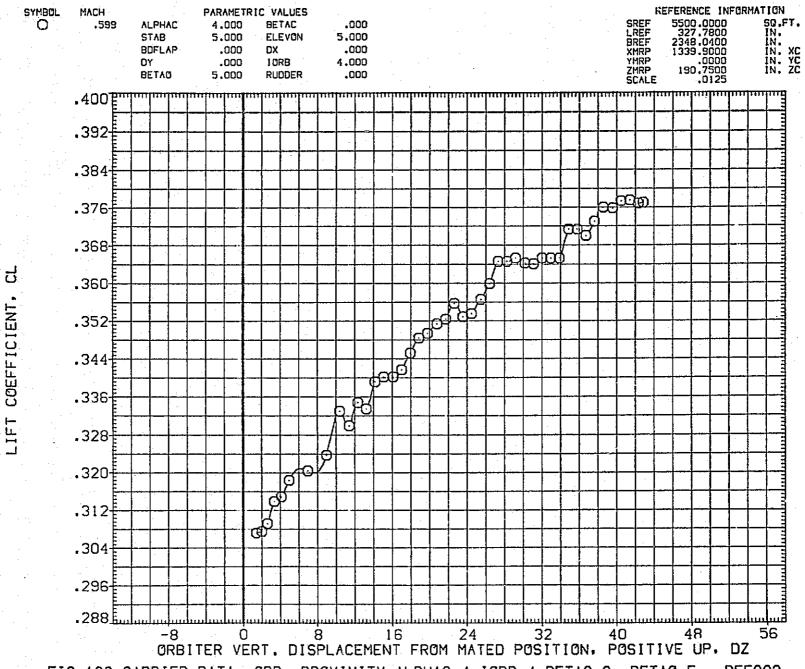
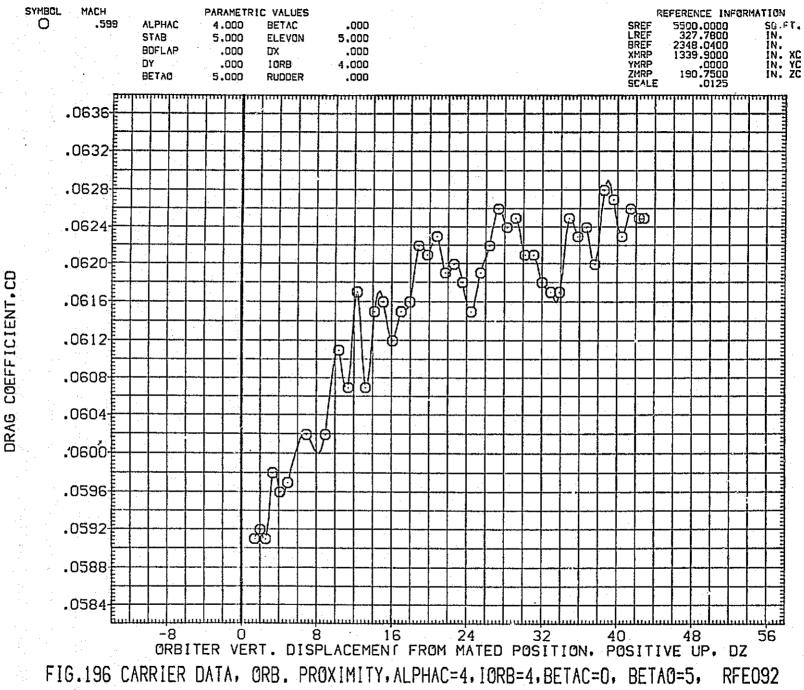


FIG.196 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=5, RFEO92



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE093)

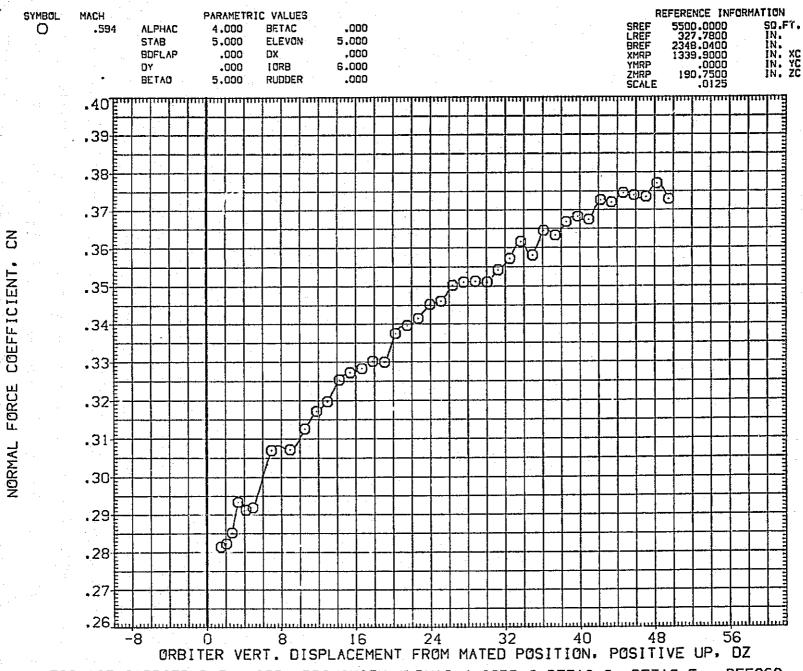
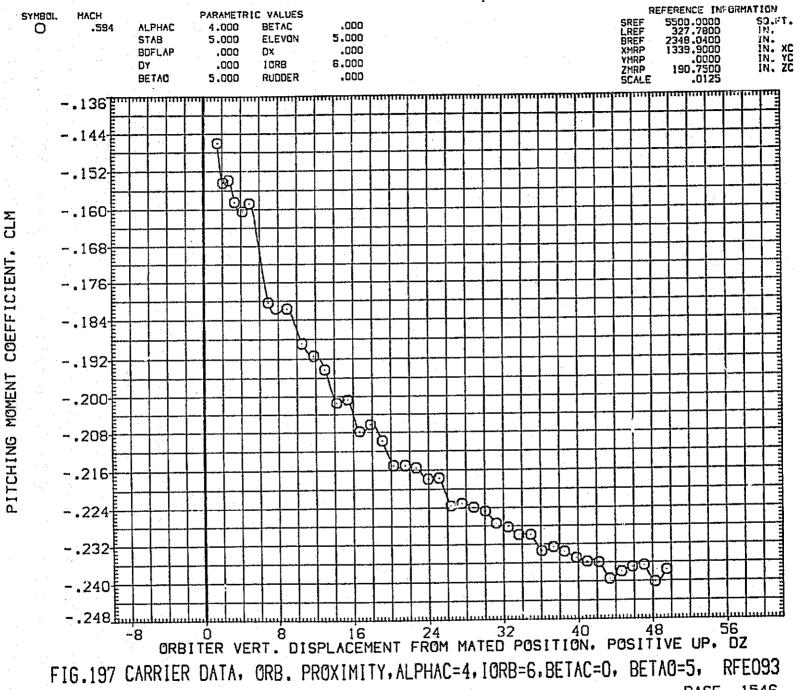


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE093)

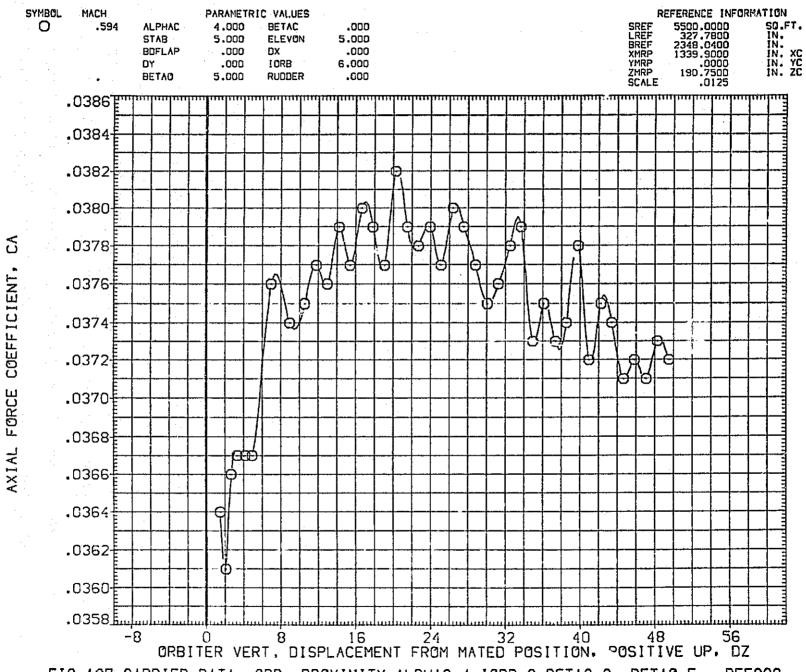


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93

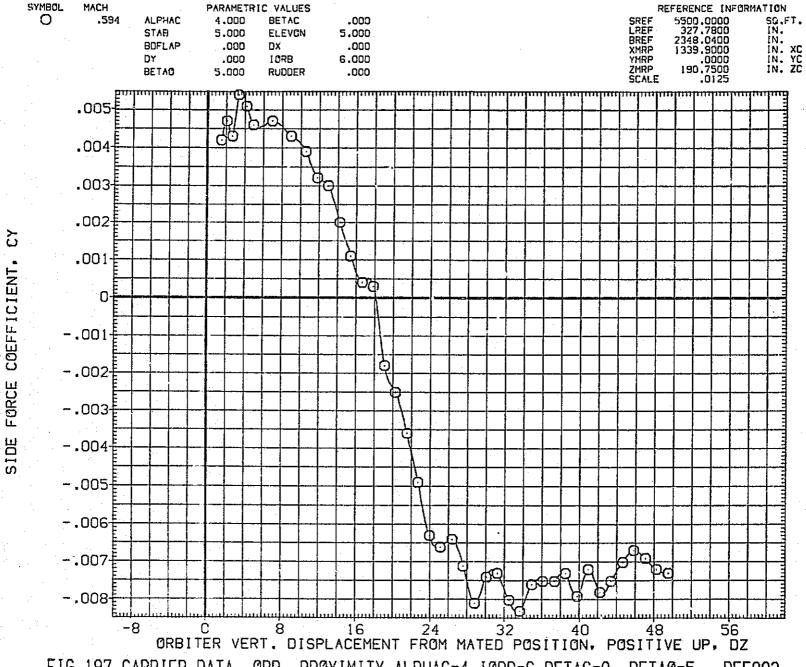
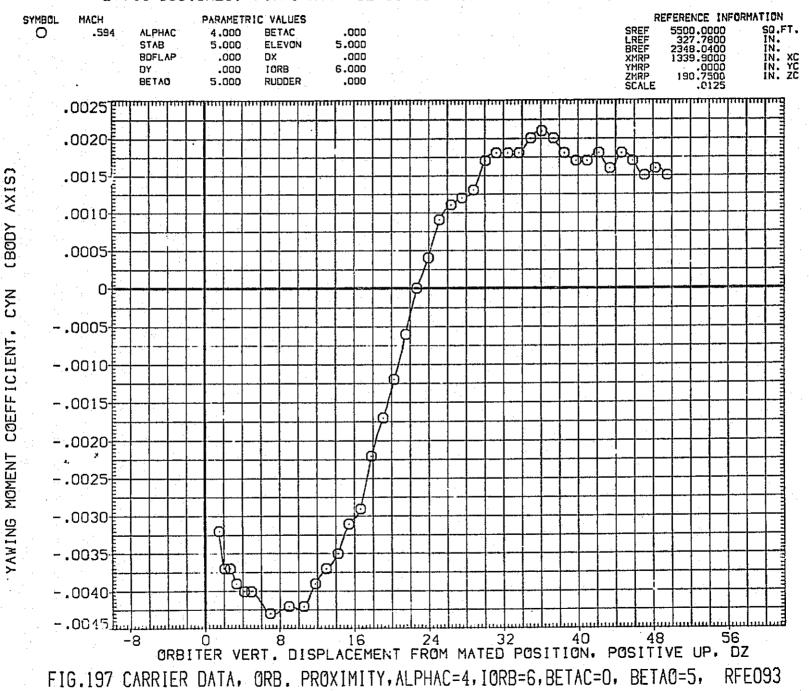


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE093)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE093)

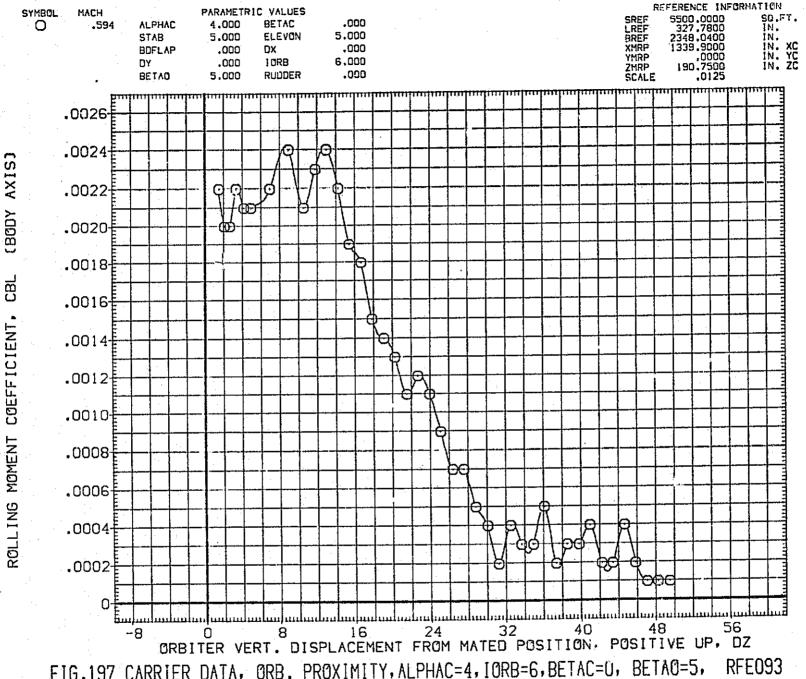


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93 PAGE 1550

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE093)

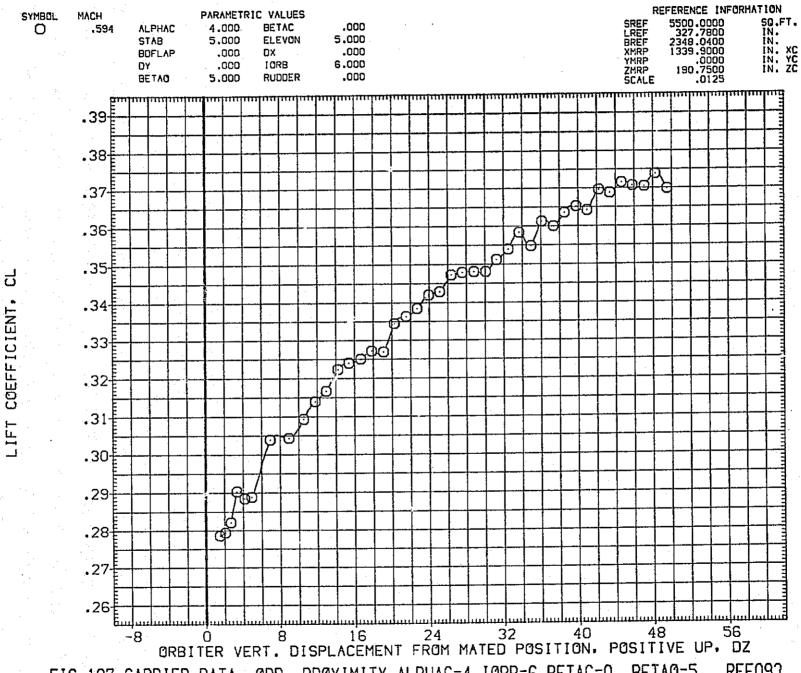


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93

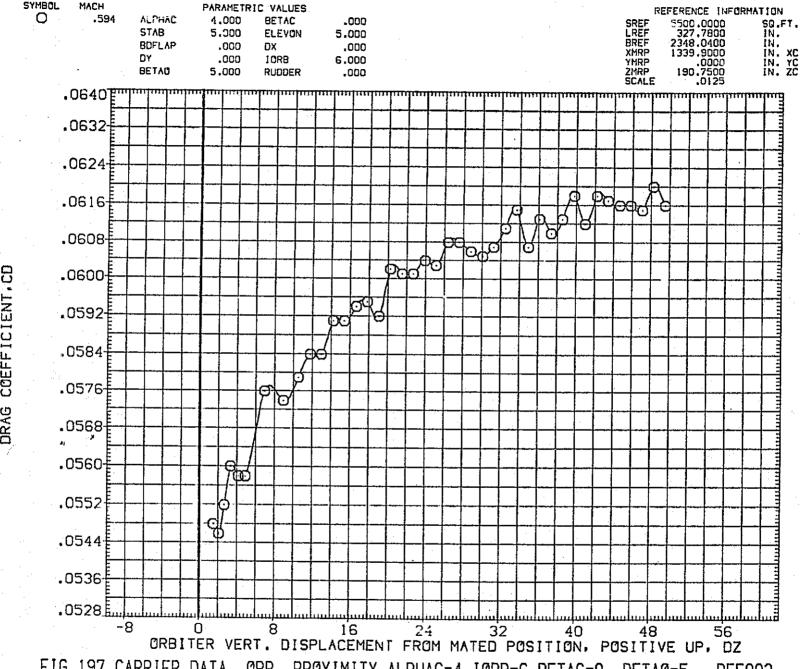


FIG.197 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=5, RFEO93

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE094)

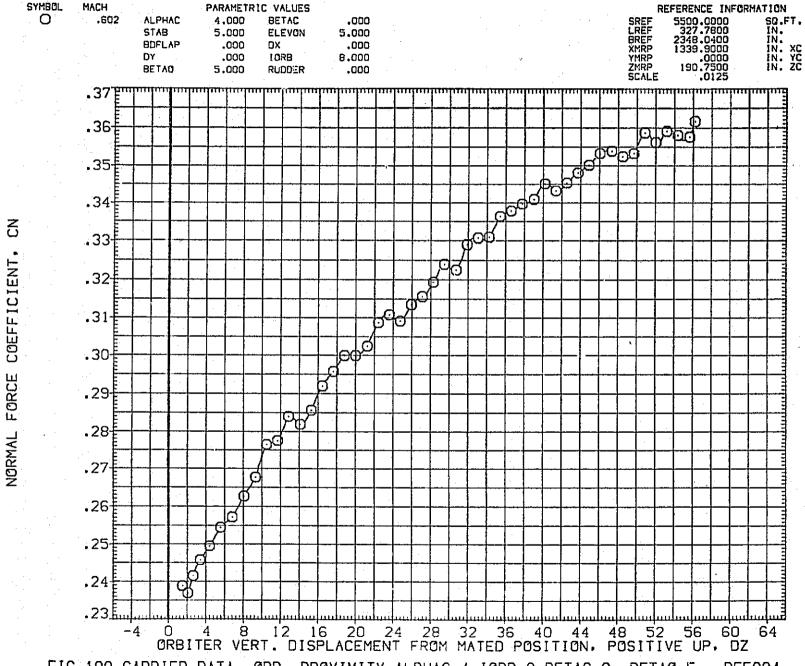


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

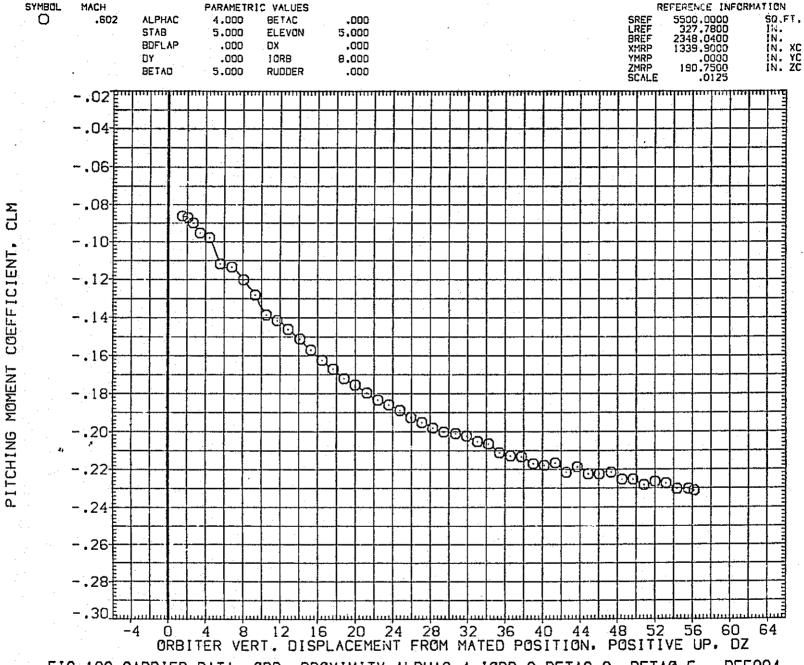


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE094)

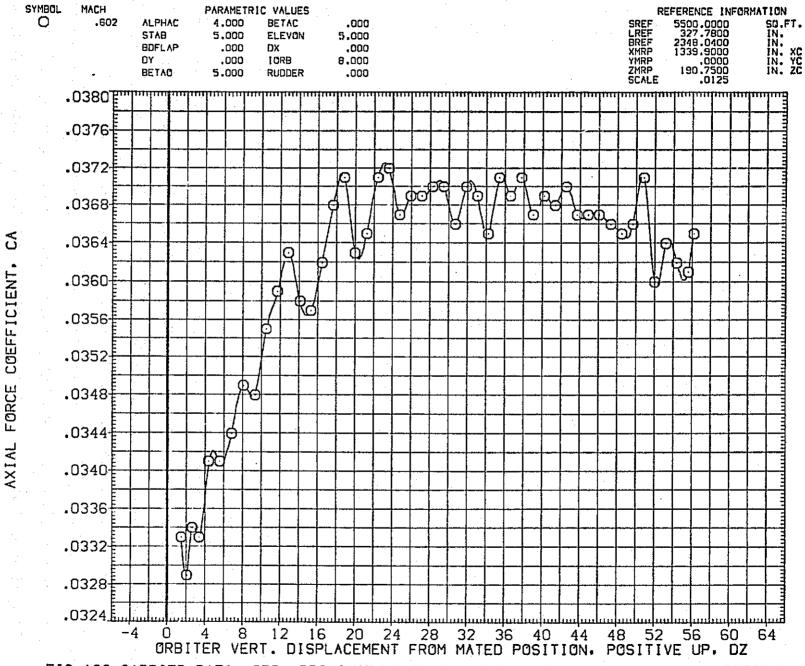


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

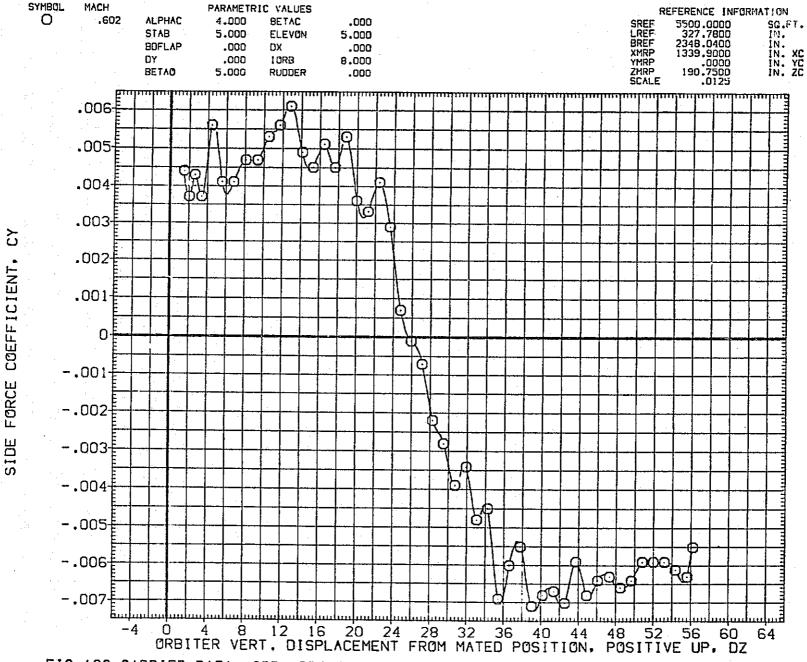


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE094)

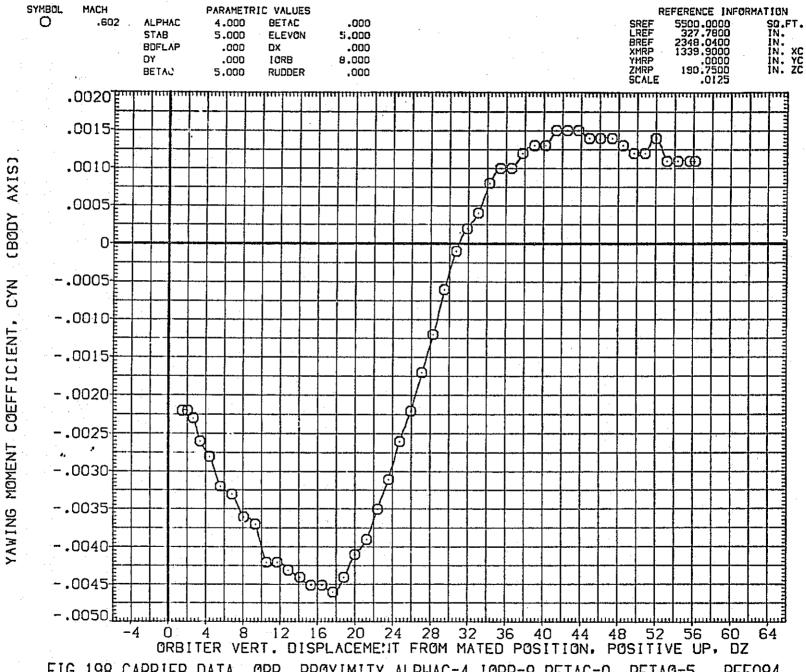


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE094)

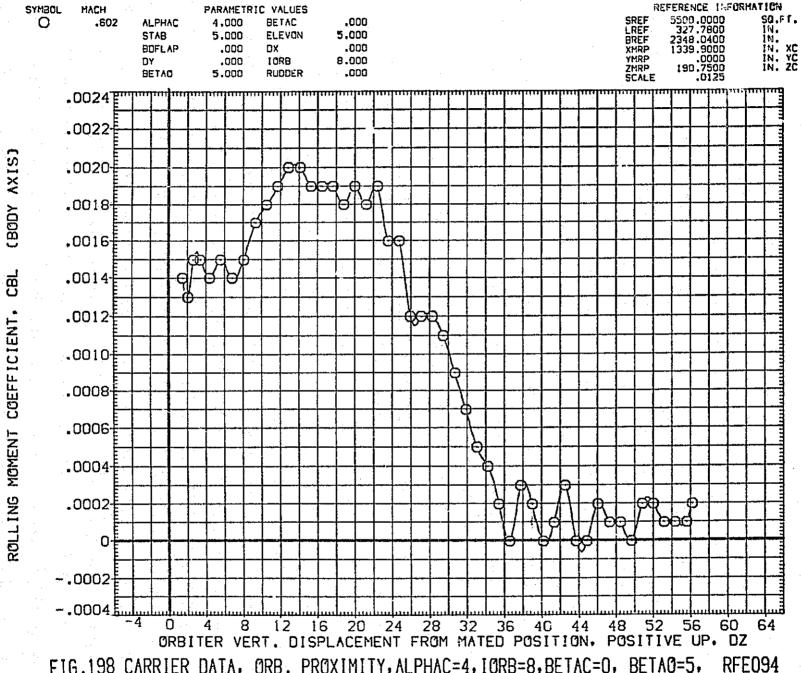
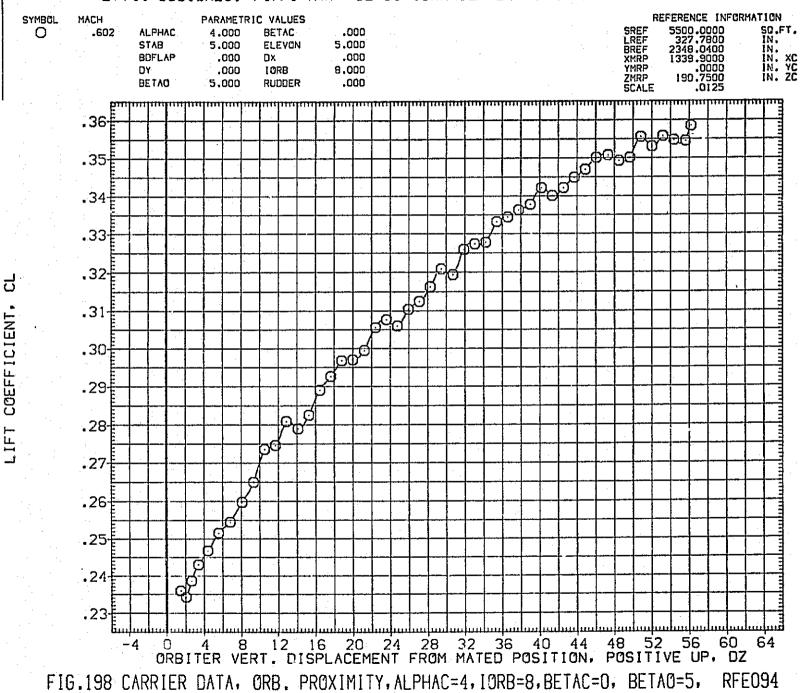


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94 PAGE 1558

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE094)



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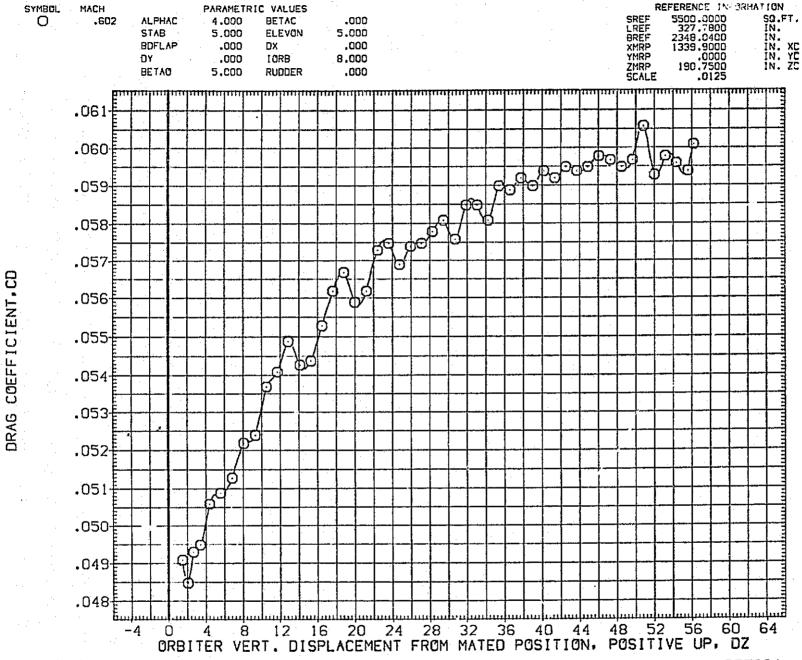


FIG.198 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=5, RFEO94

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE095)

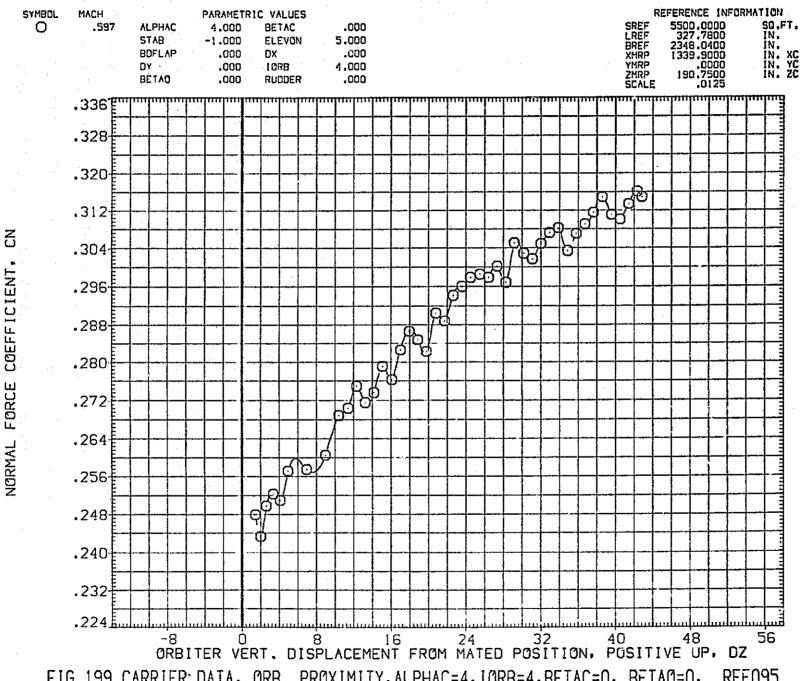


FIG.199 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, PAGE 1561

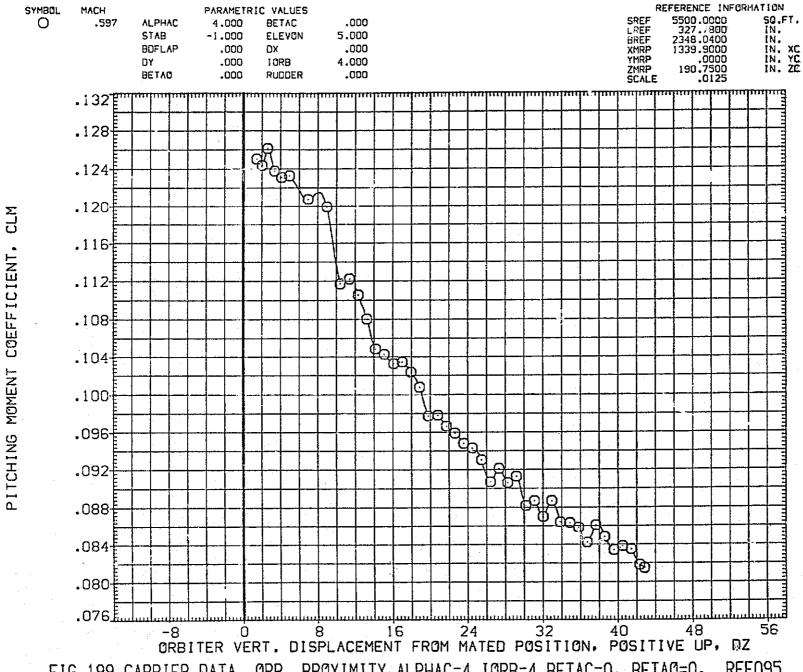


FIG.199 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO95

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE095)

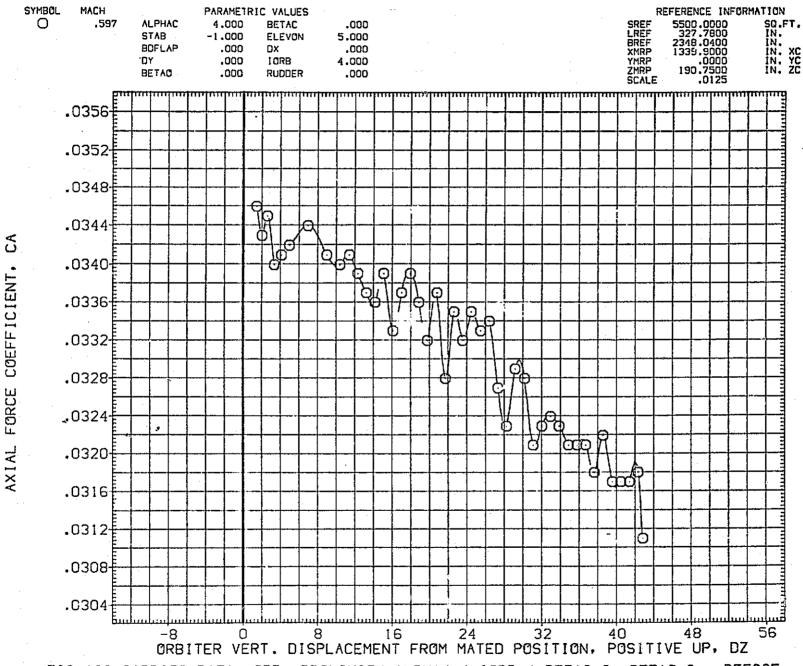


FIG.199 CARRIER DATA, ORB. PROXIMITY.ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO95

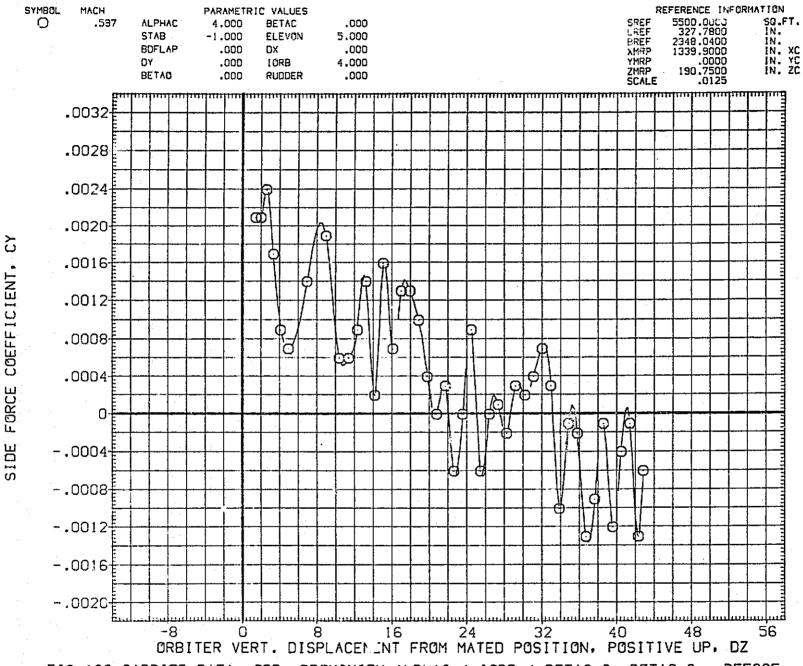
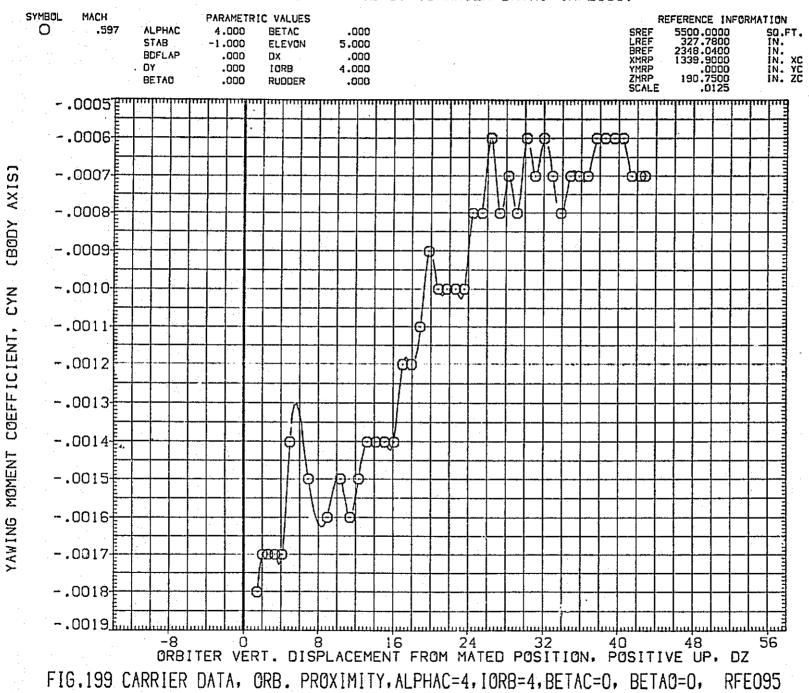


FIG.199 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO95

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE095)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE095)

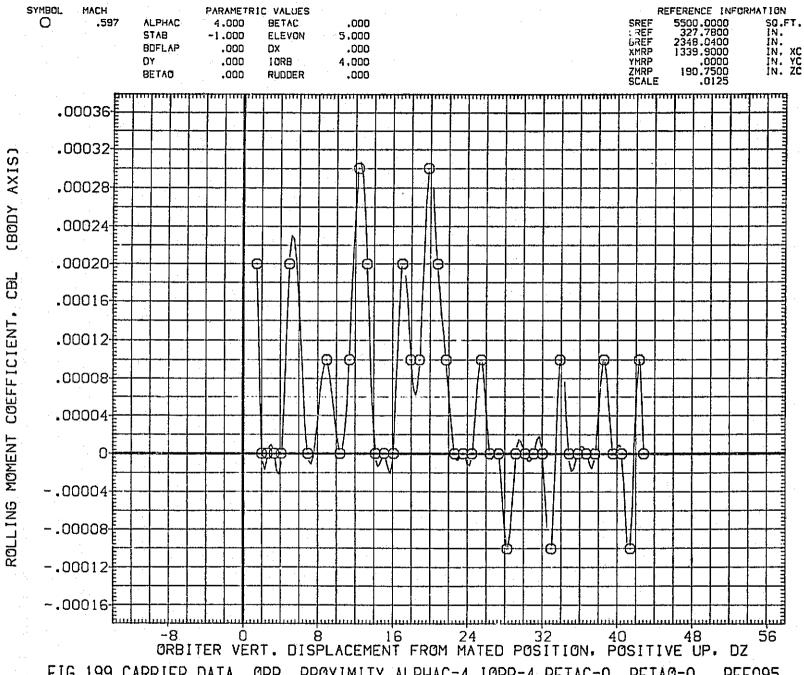
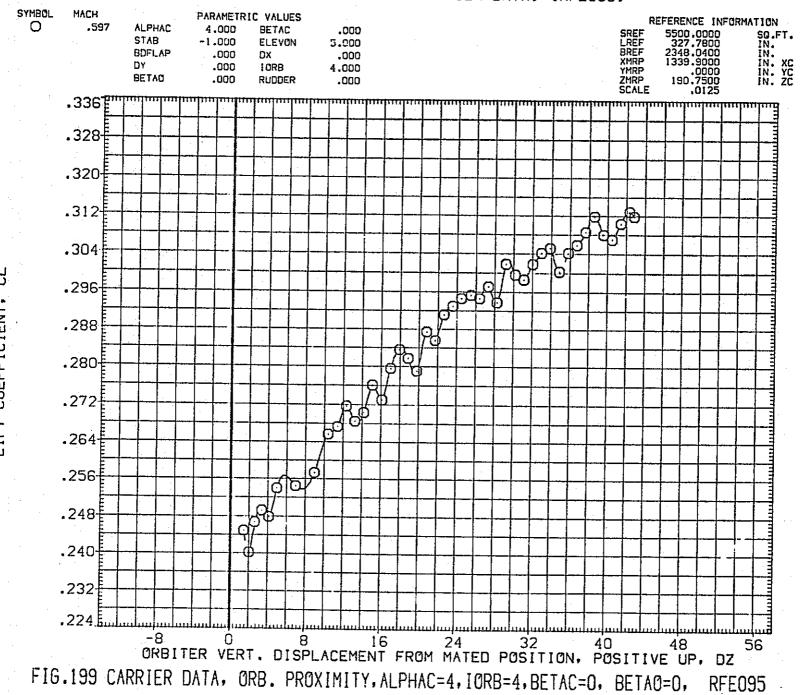
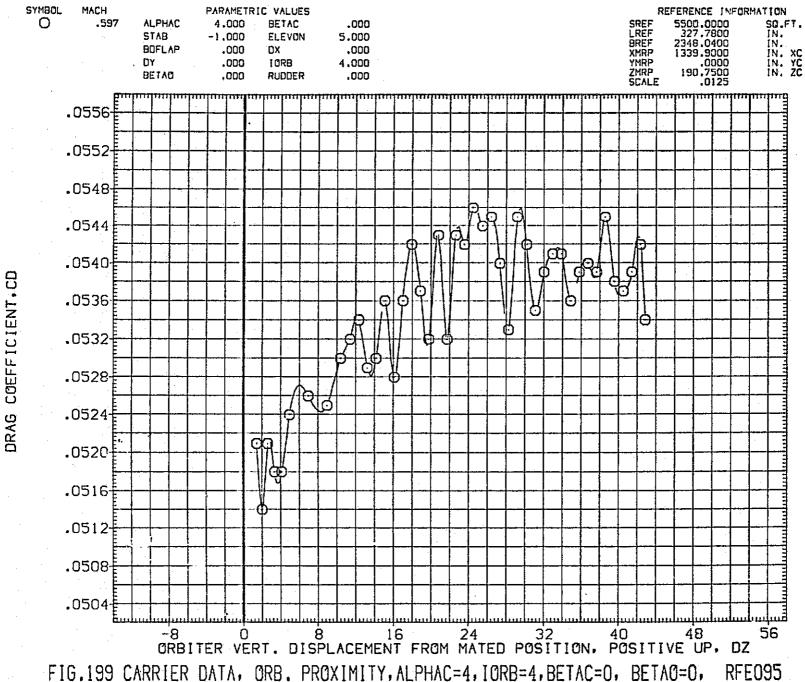


FIG.199 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO95

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE095)





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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE096)

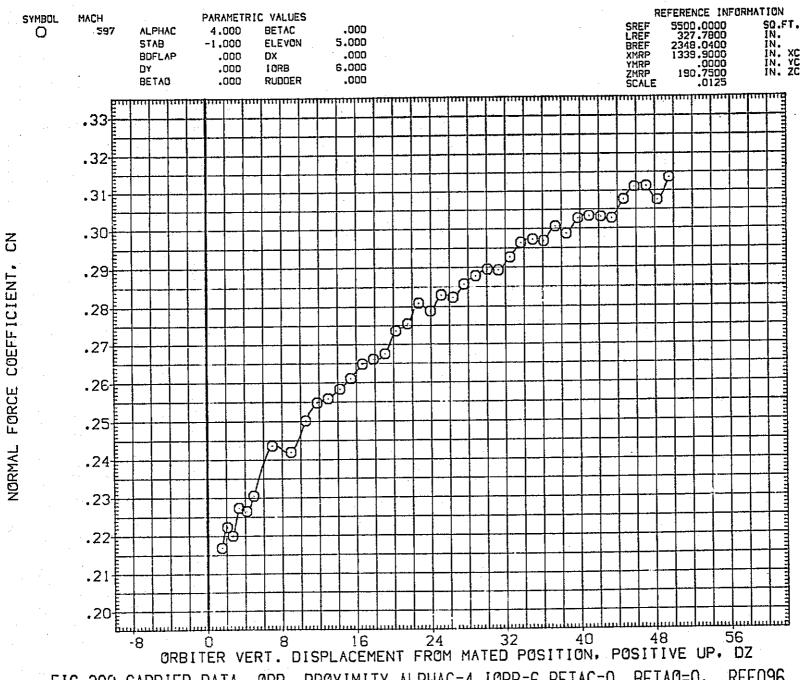


FIG.200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE096

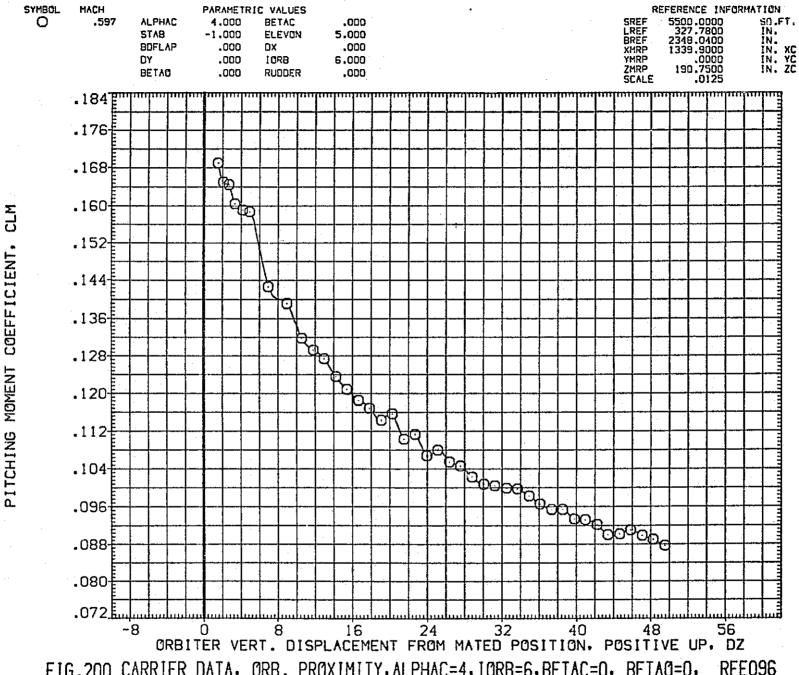


FIG.200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO96 PAGE 1570

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE096)

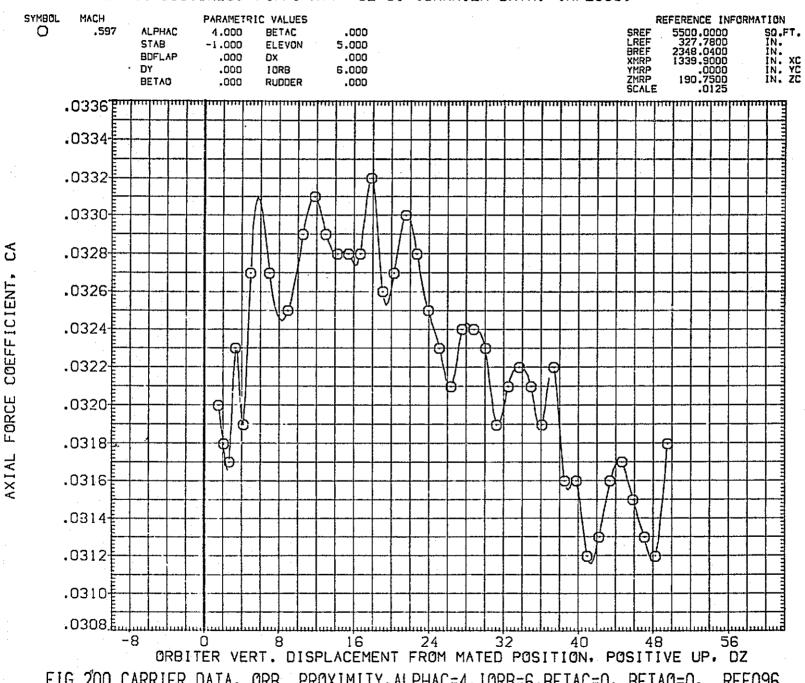


FIG. 200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO96

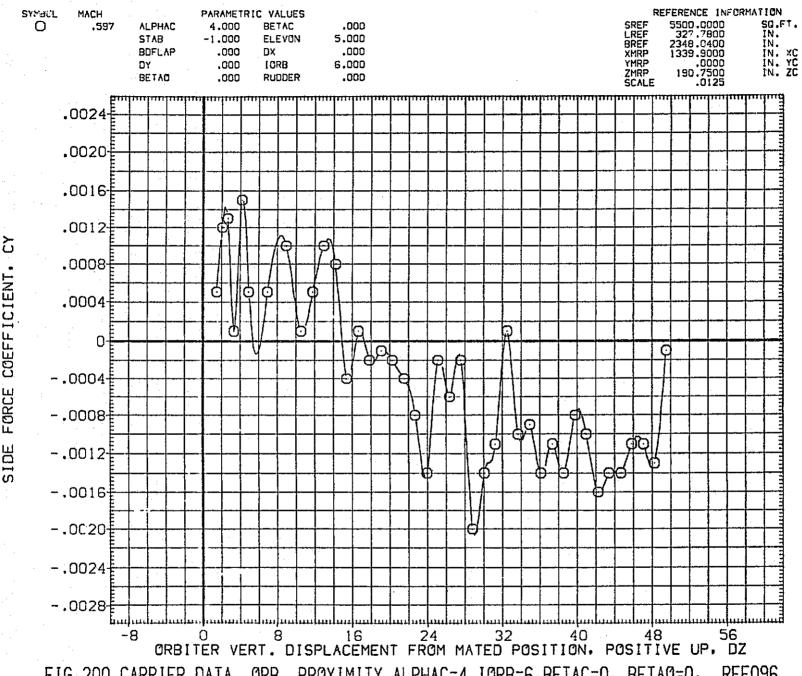
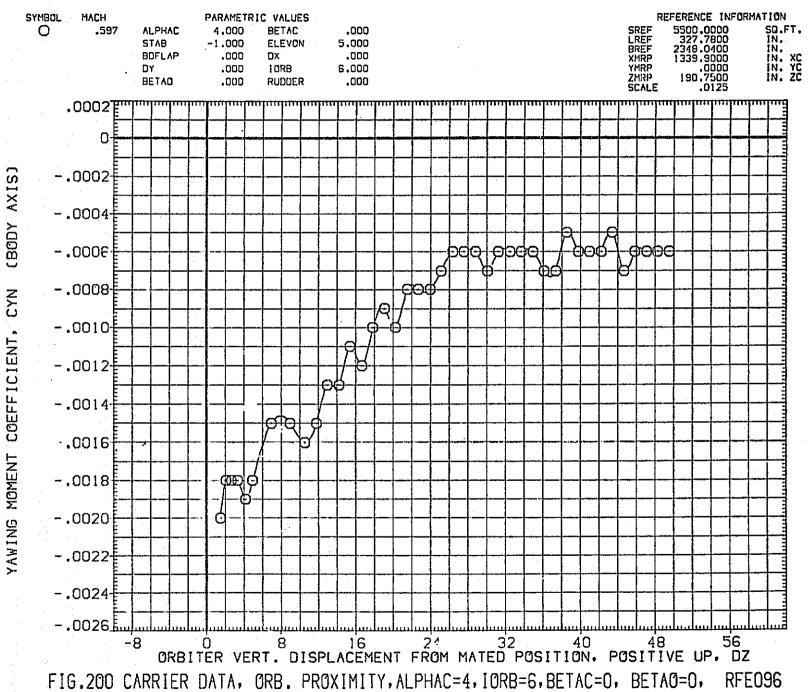
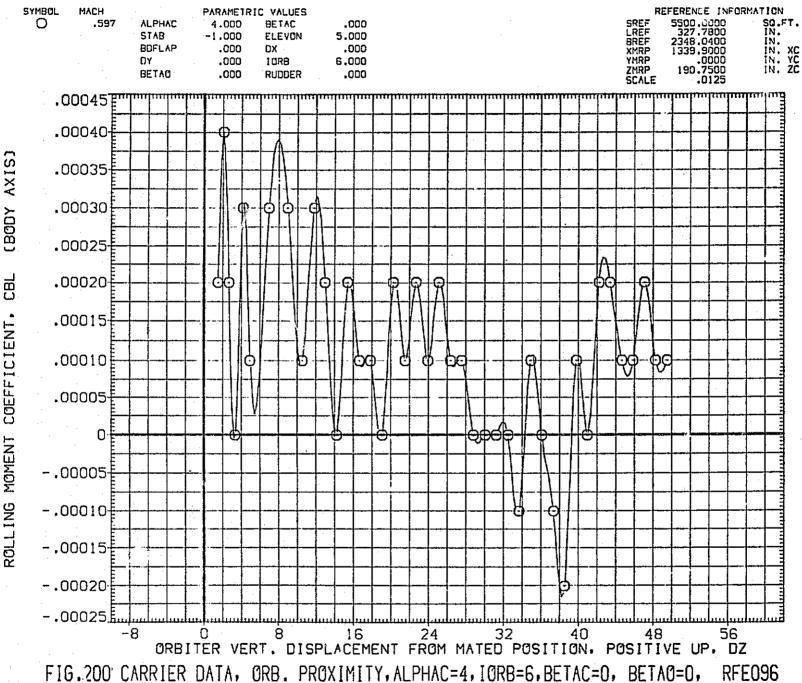


FIG.200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO96
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE096)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE096)

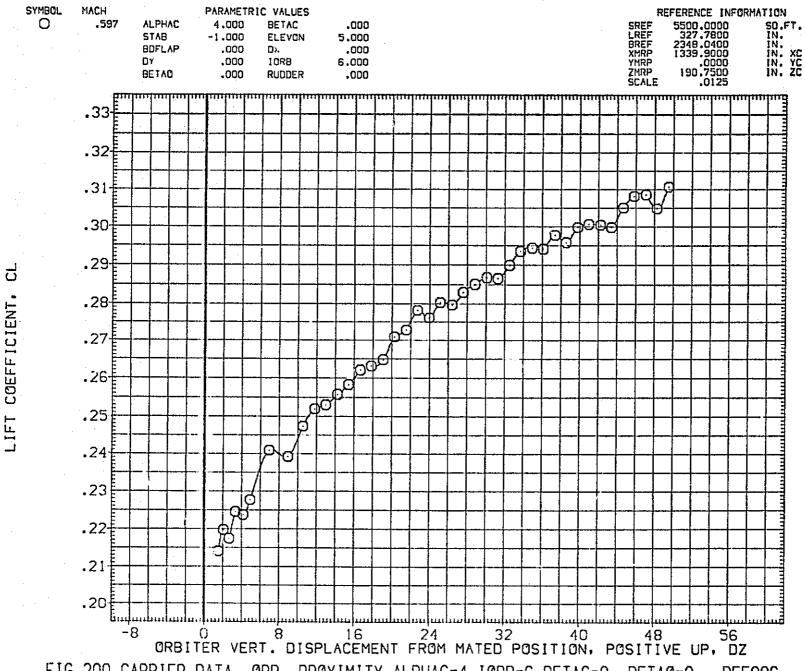


FIG.200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO96

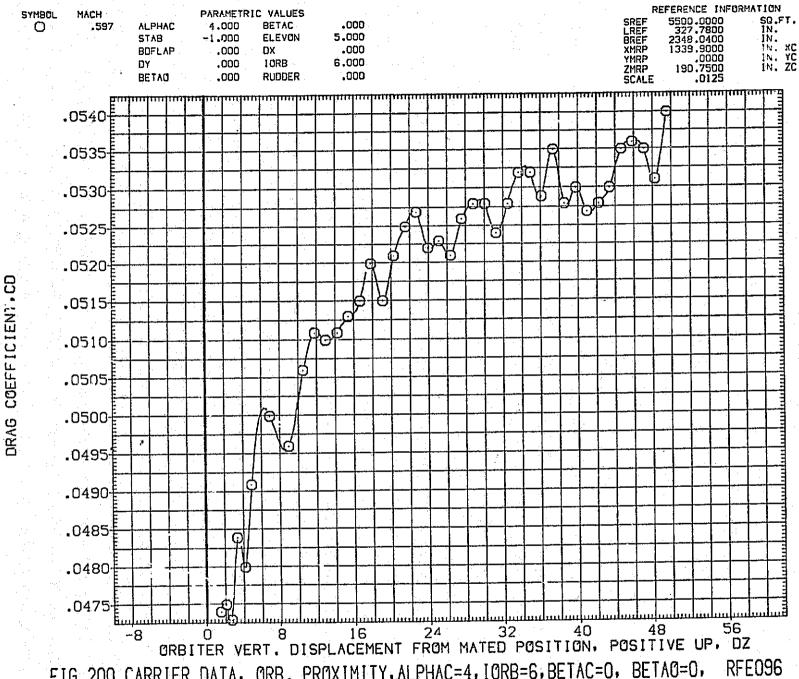


FIG. 200 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, PAGE 1576

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE097)

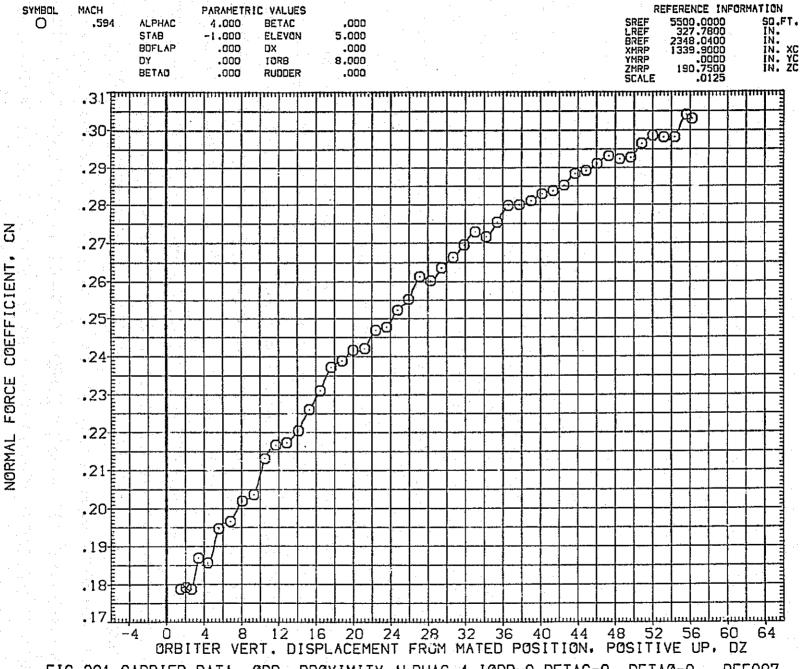


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97

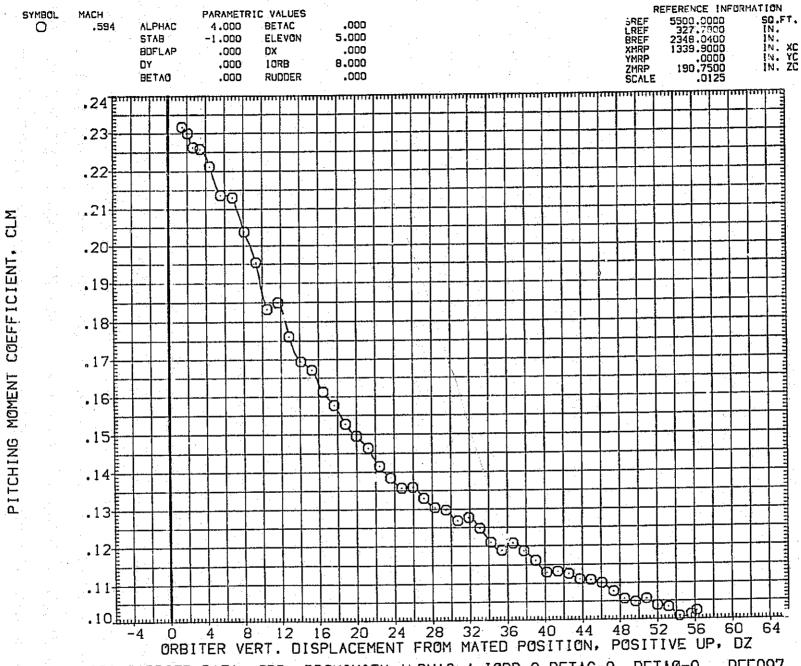
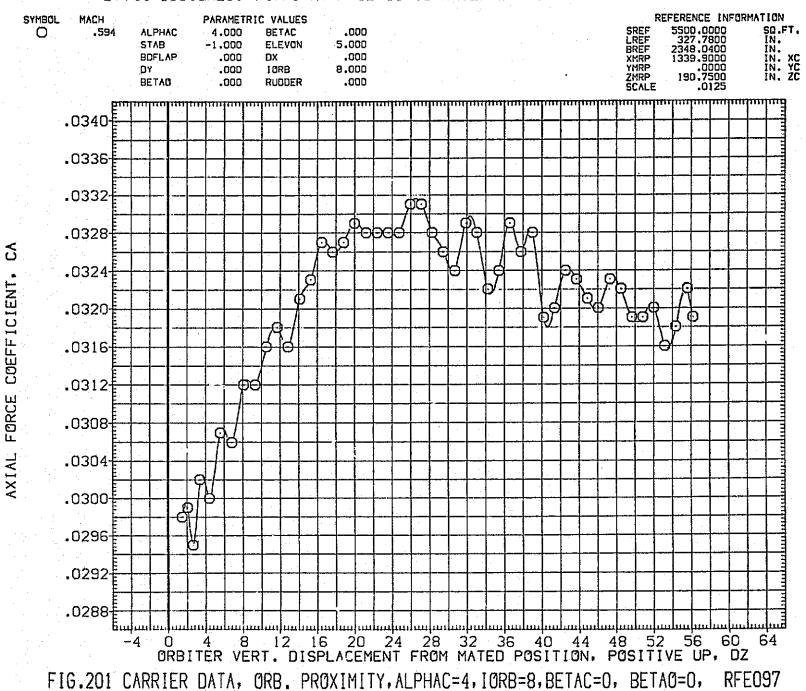


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE097)



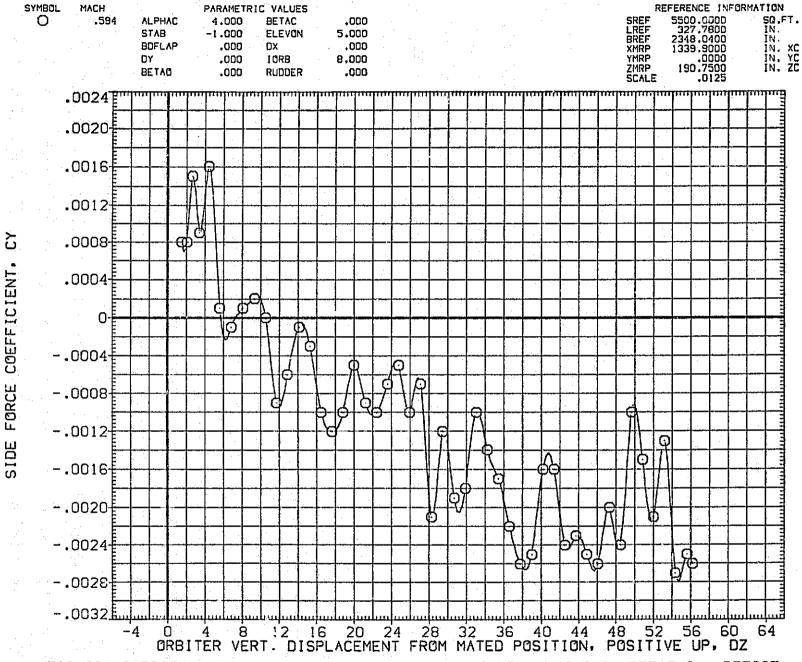


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97
PAGE 1580

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE097)

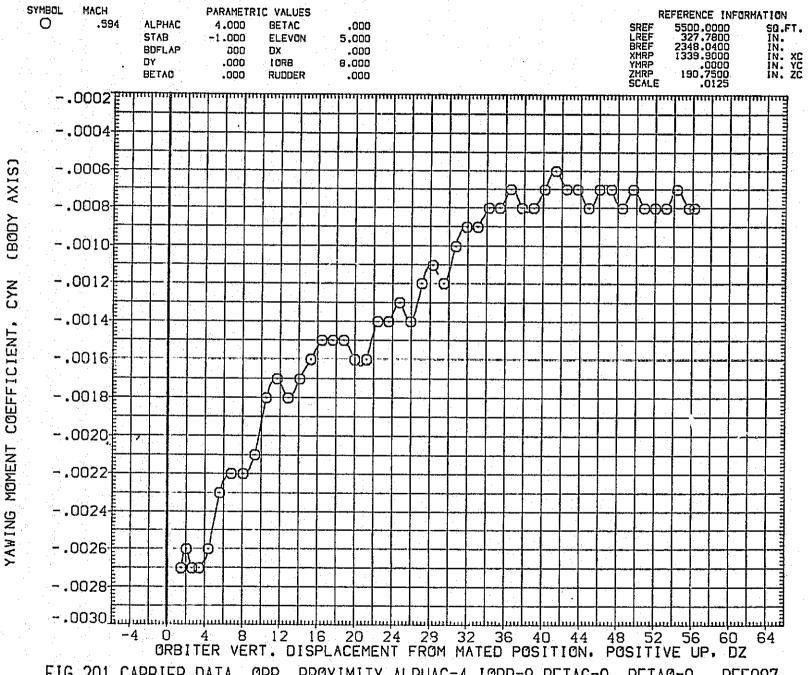


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97

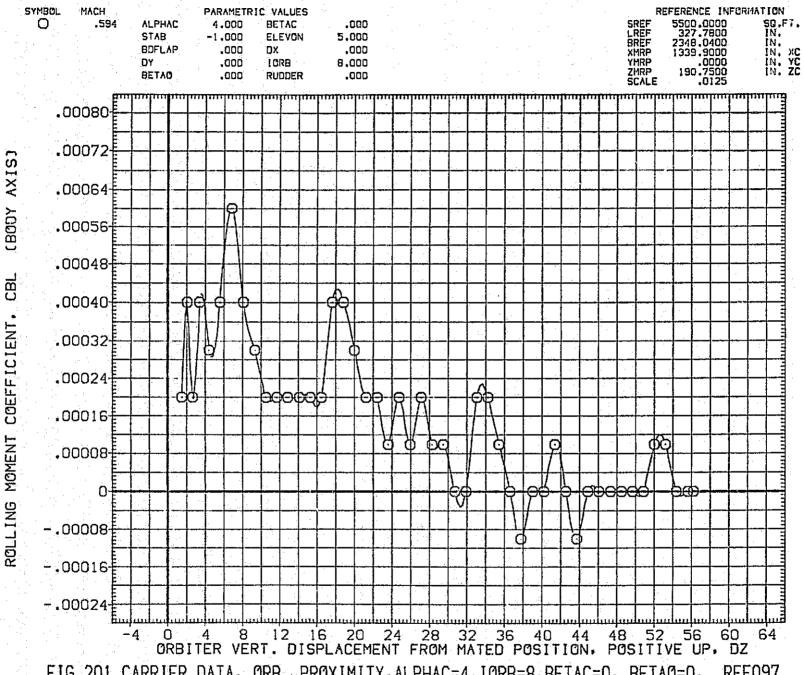
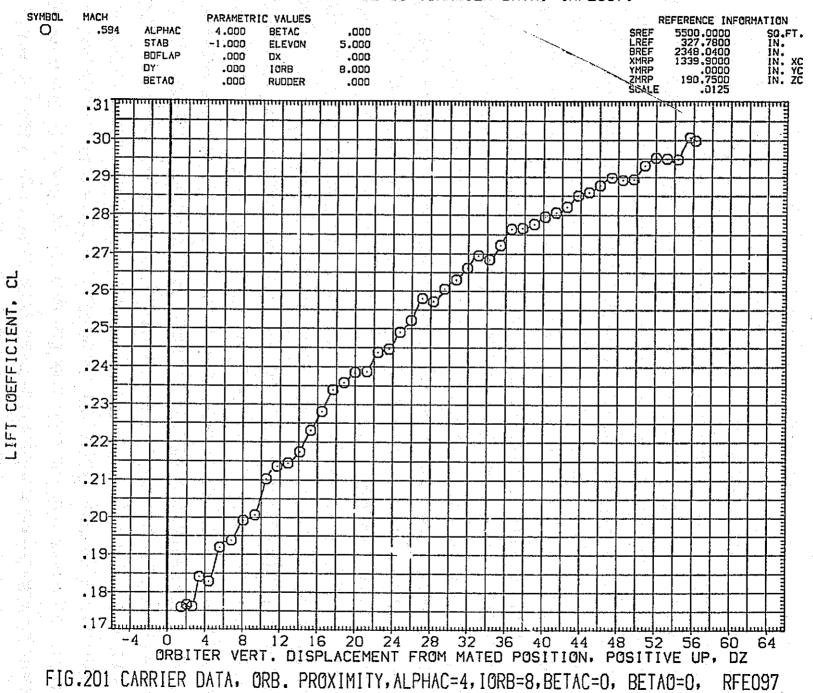


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE097)



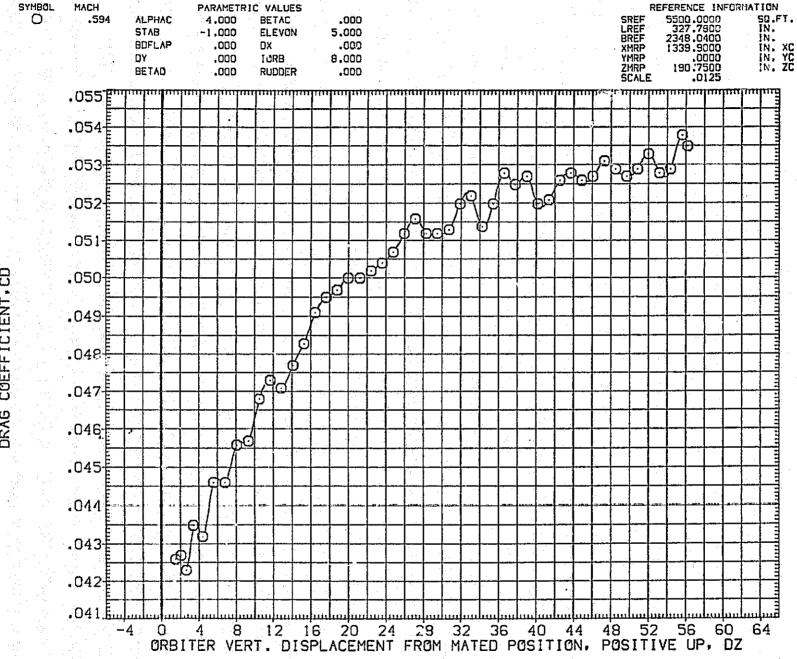


FIG.201 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFEO97

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE098)

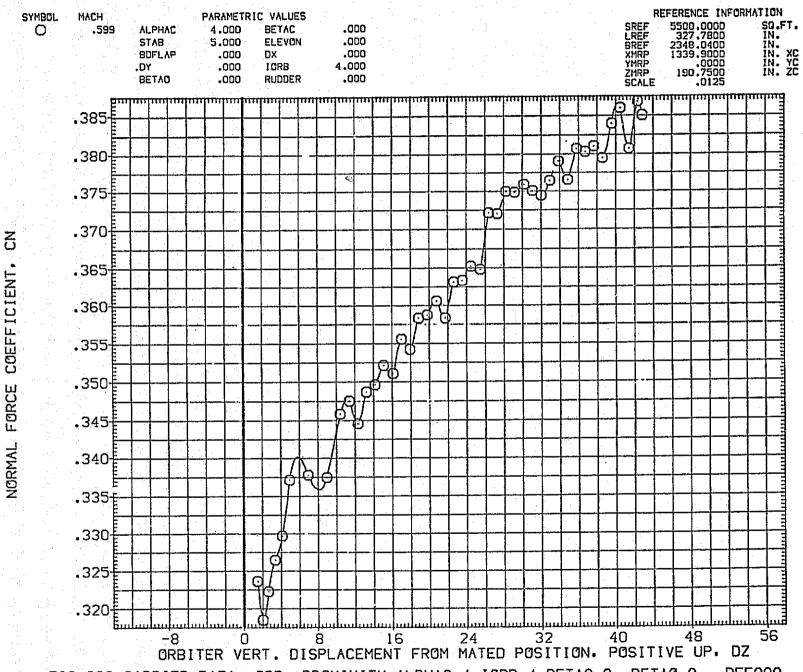


FIG. 202 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE098

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE098)

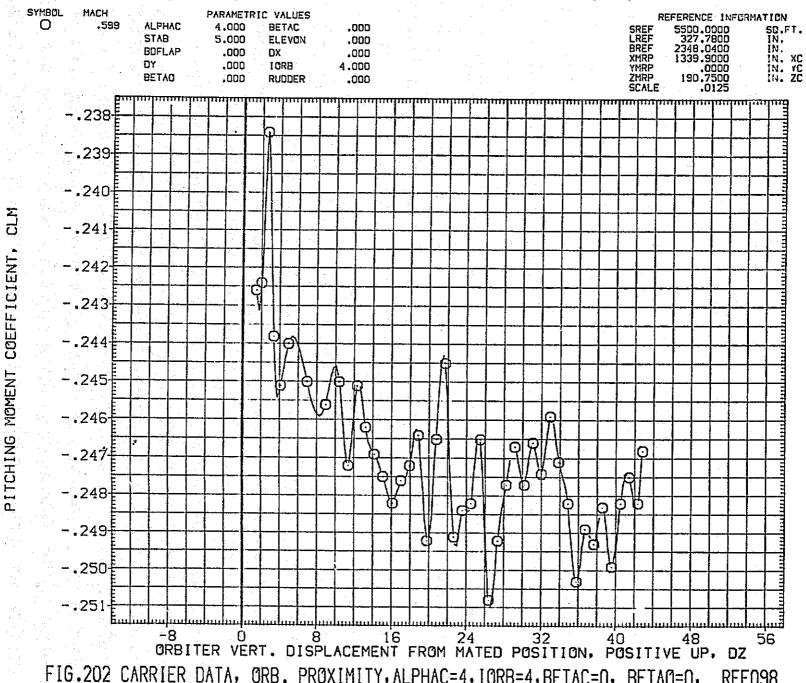
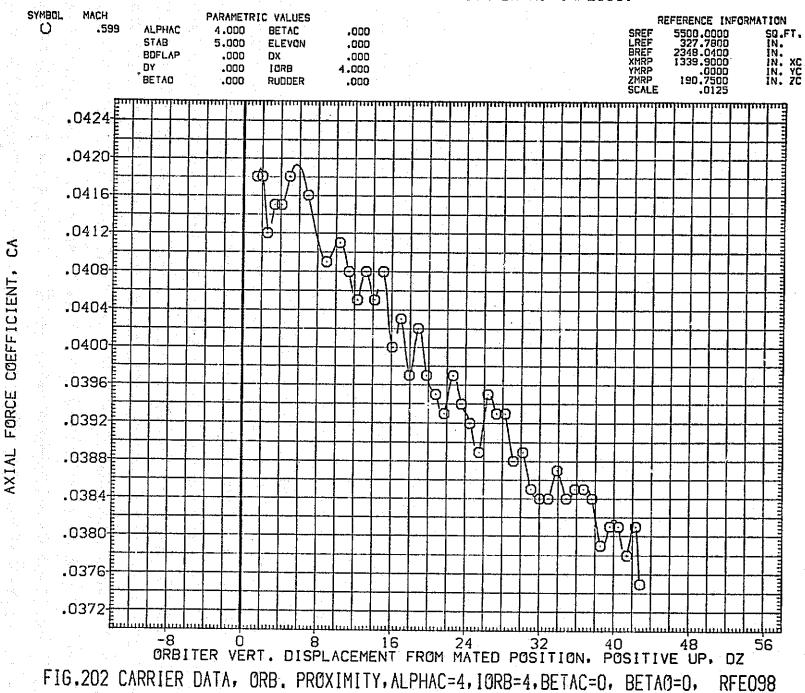
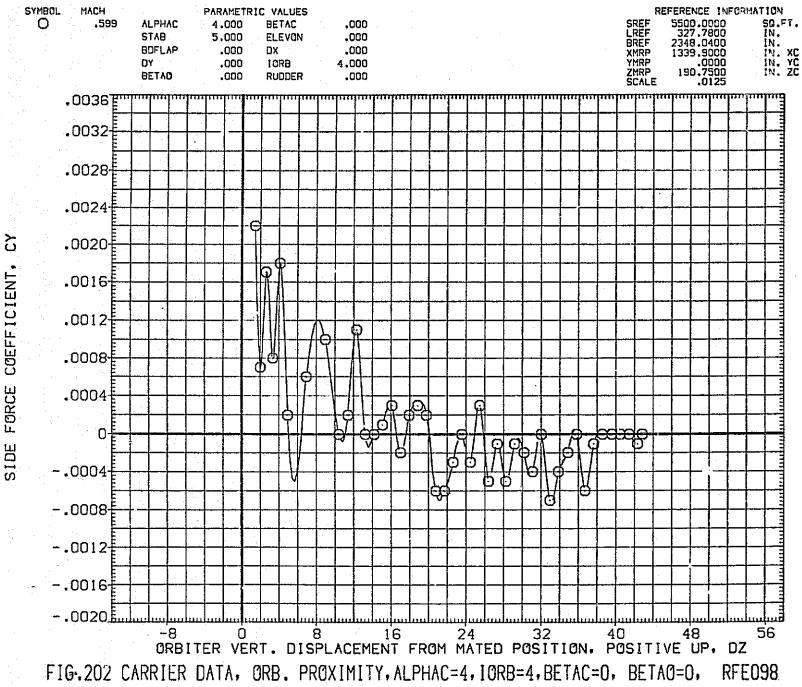


FIG.202 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO98 PAGE 1586

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE098)

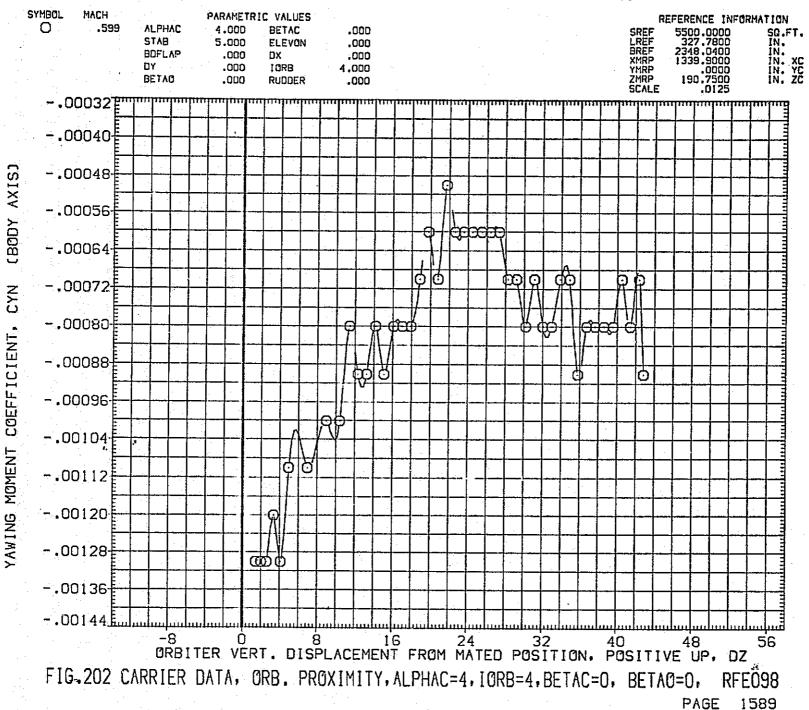


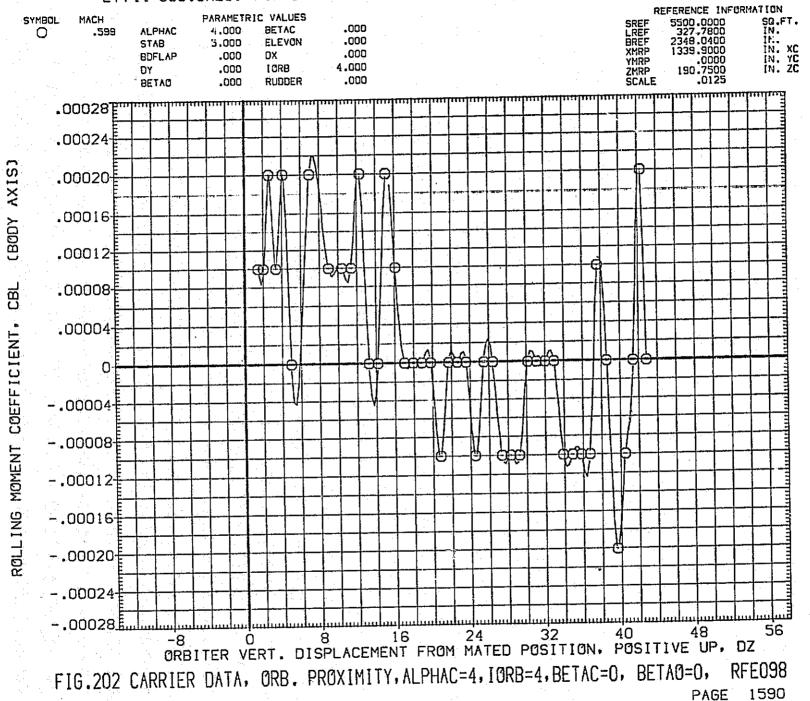
LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE098)



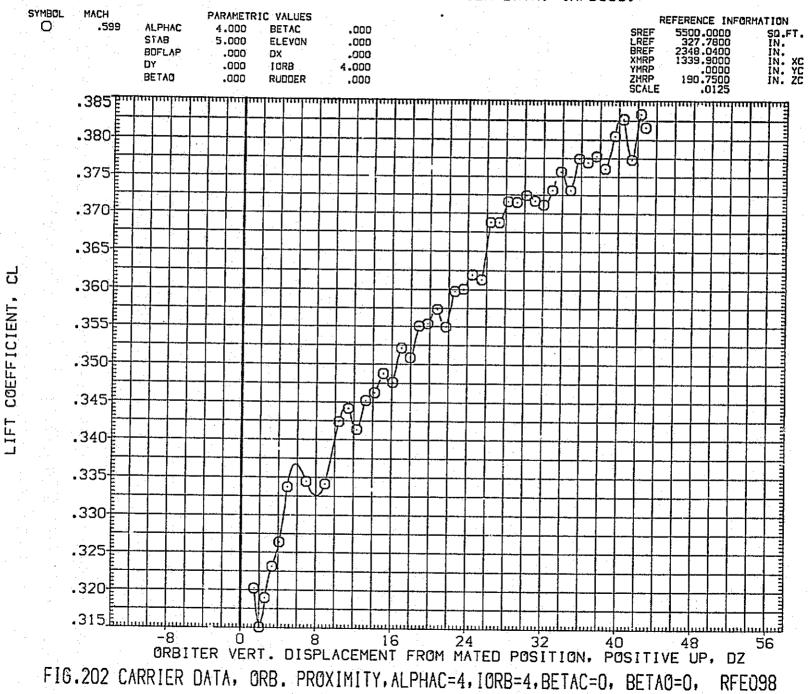
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE098)





LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE098)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE098)

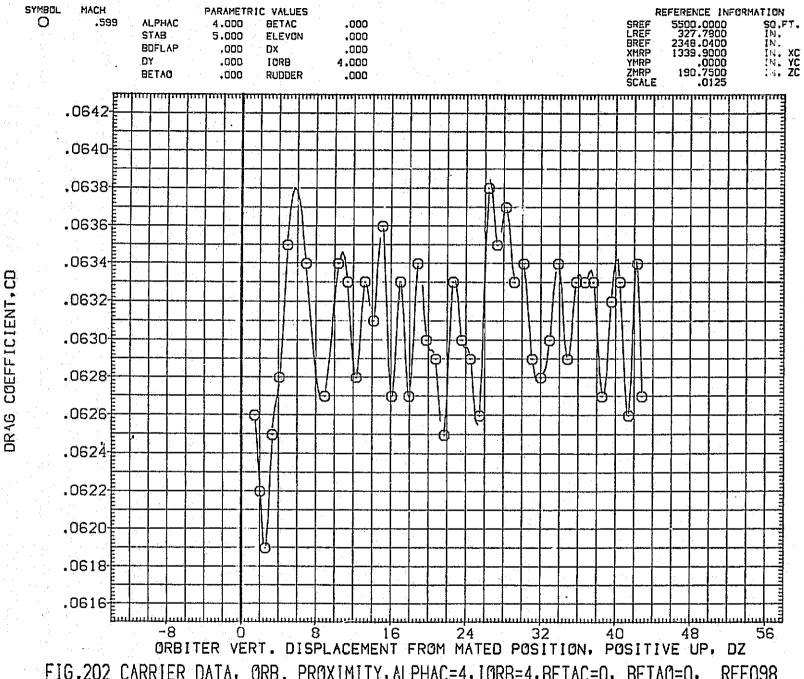


FIG.202 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFEO98 PAGE 1592

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE099)

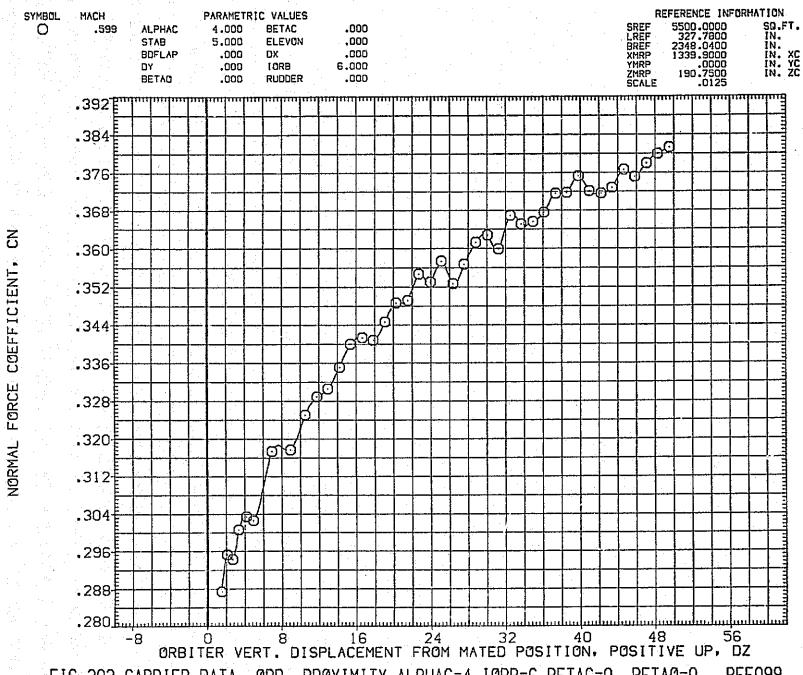
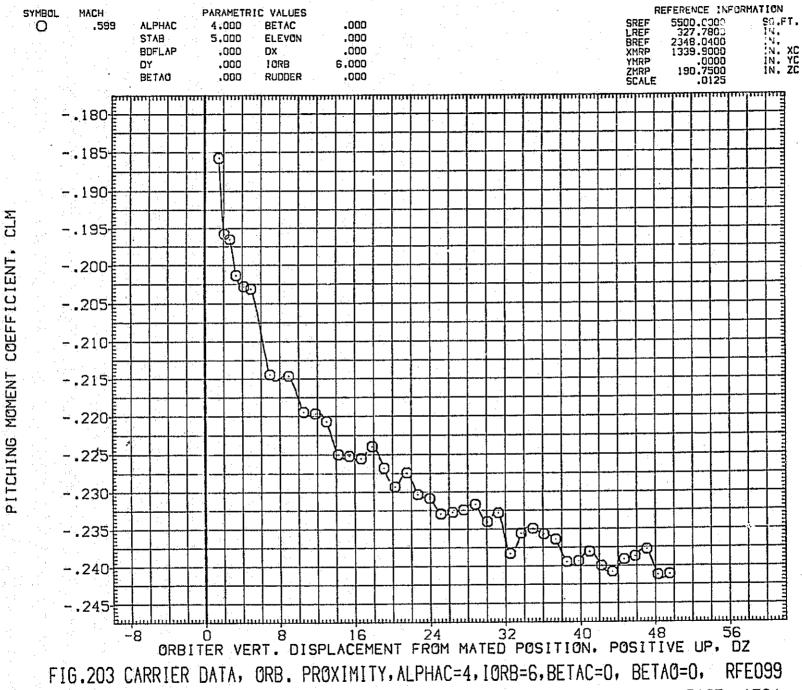


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO99



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LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE099)

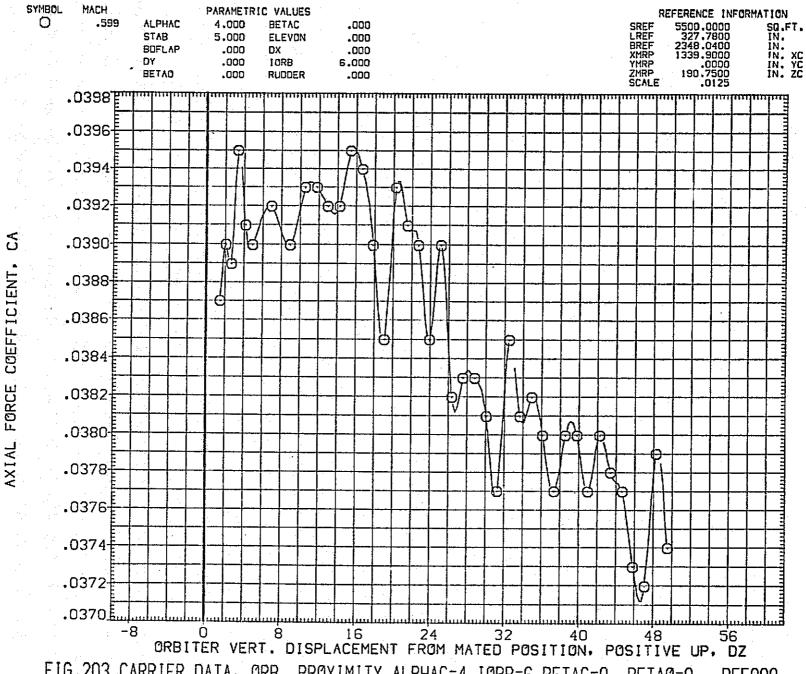


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0,

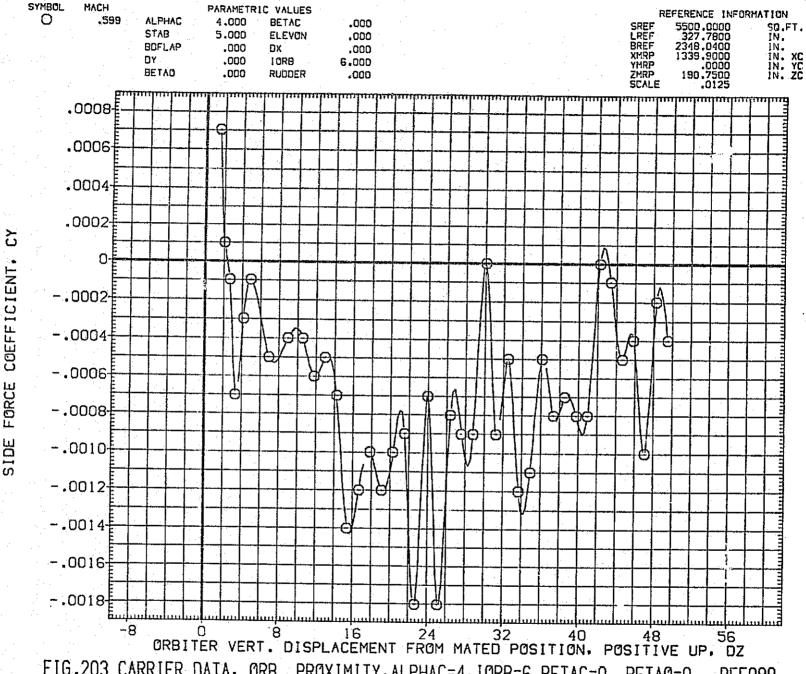
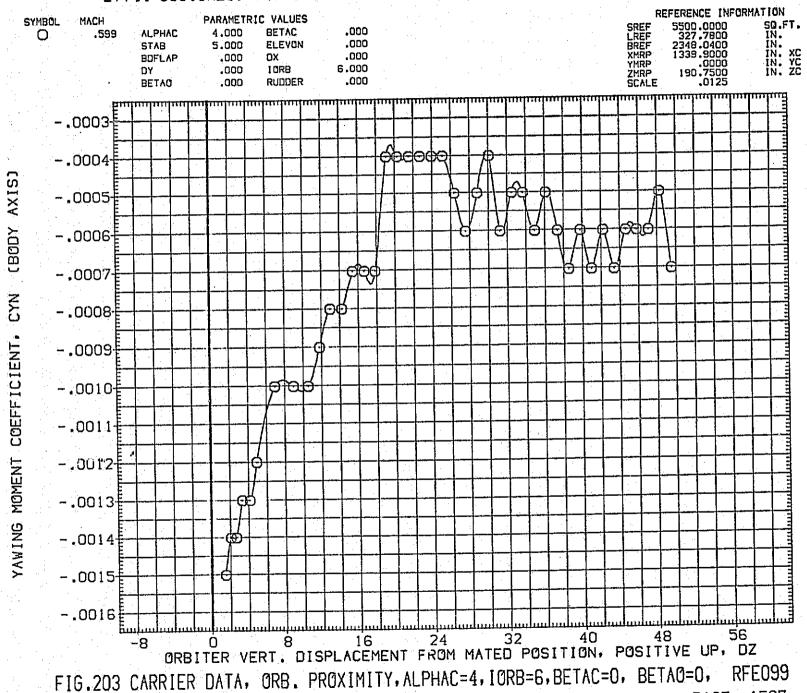


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO99

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE099)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE099)

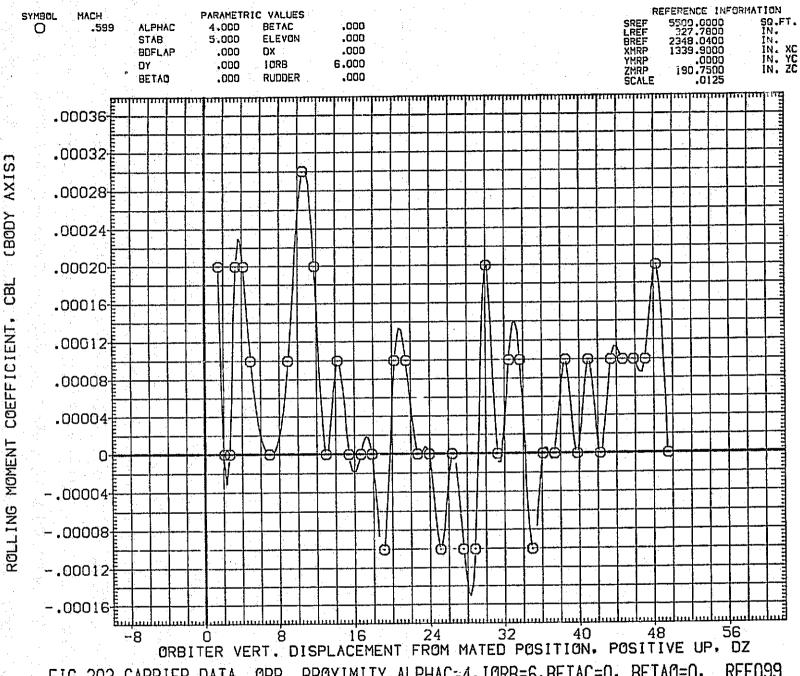


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO99

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE099)

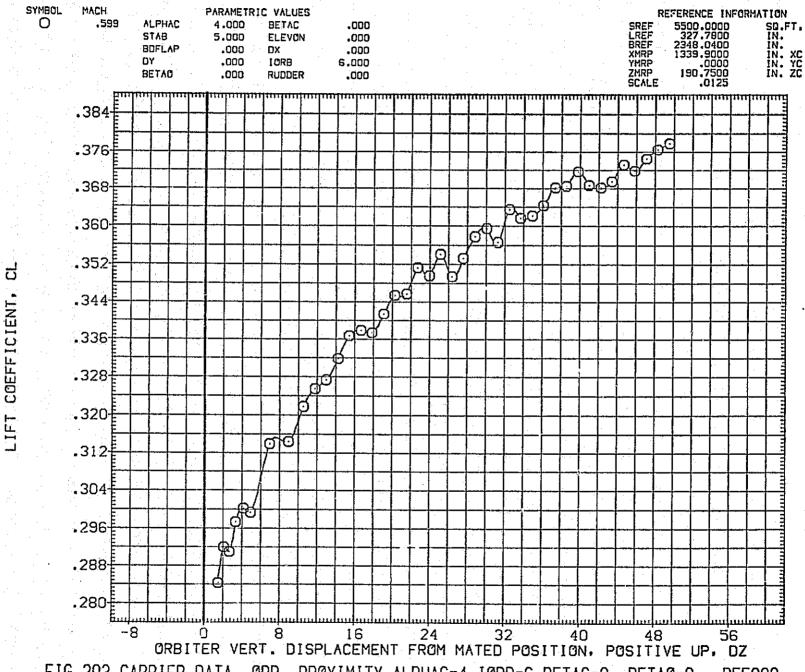


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFEO99

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE099)

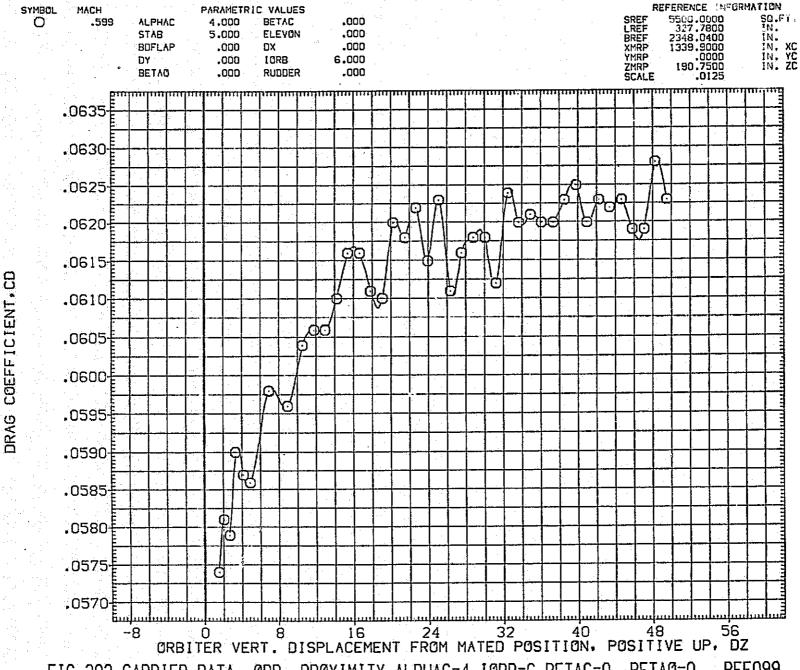


FIG.203 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, 10RB=6, BETAC=0, BETAO=0, RFEO99

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE100)

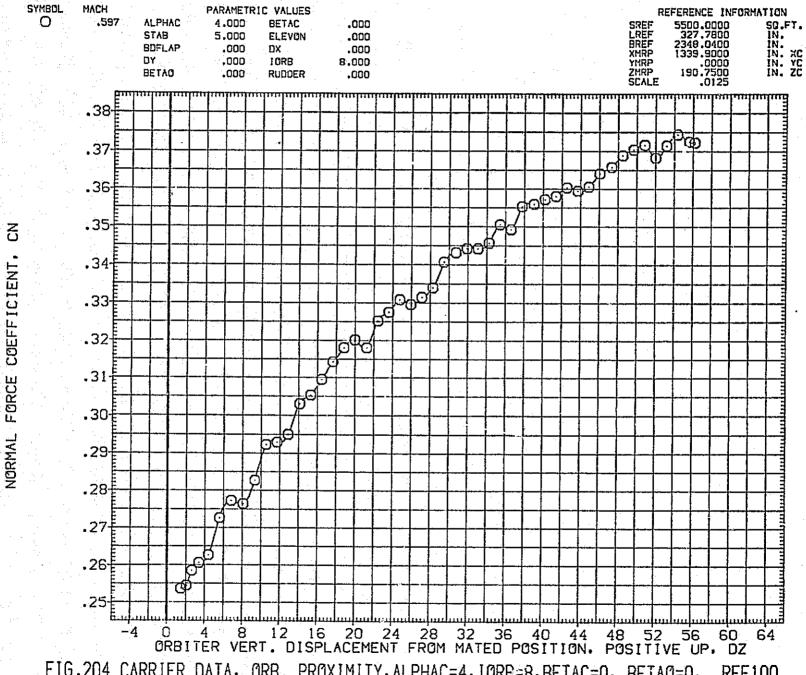


FIG.204 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAG=0, RFE100

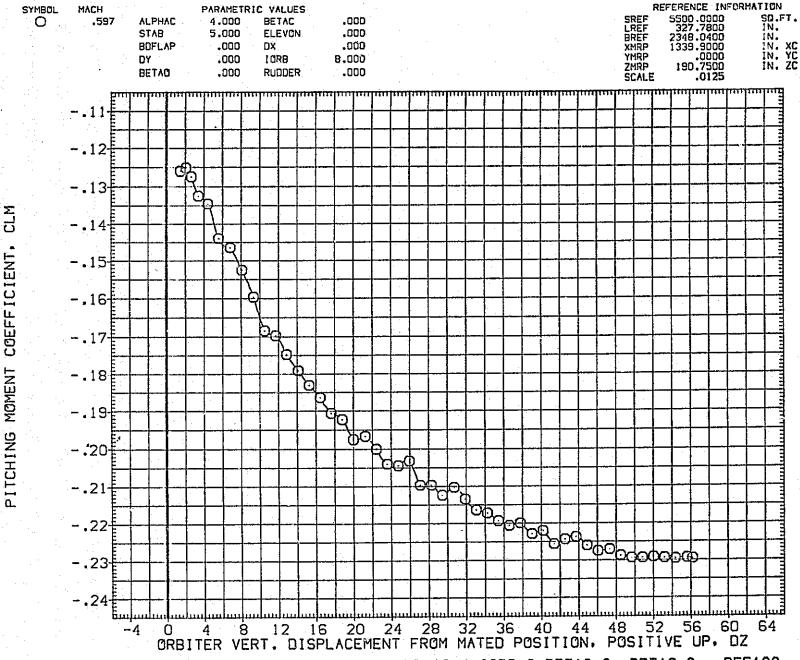
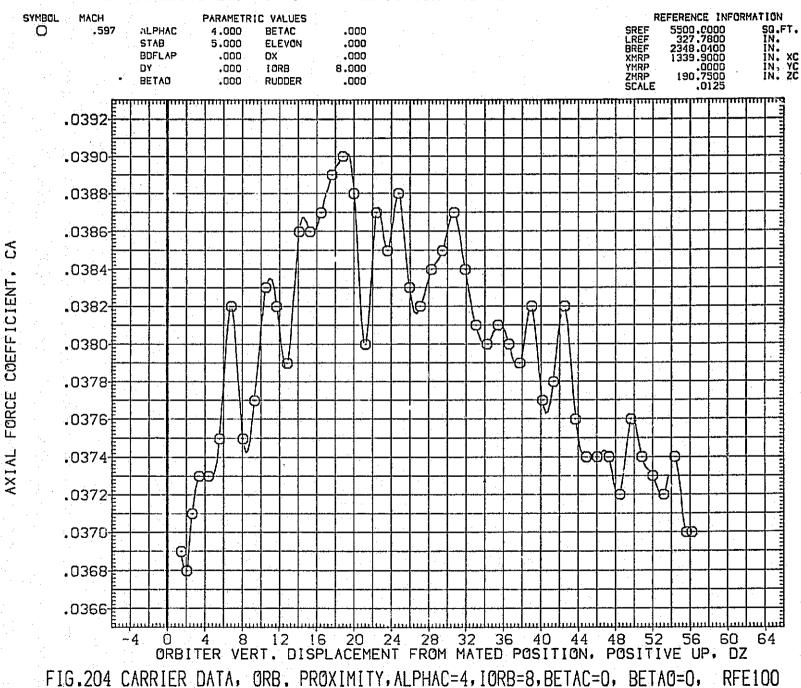


FIG.204 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE100
PAGE 1602

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE100)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE100)

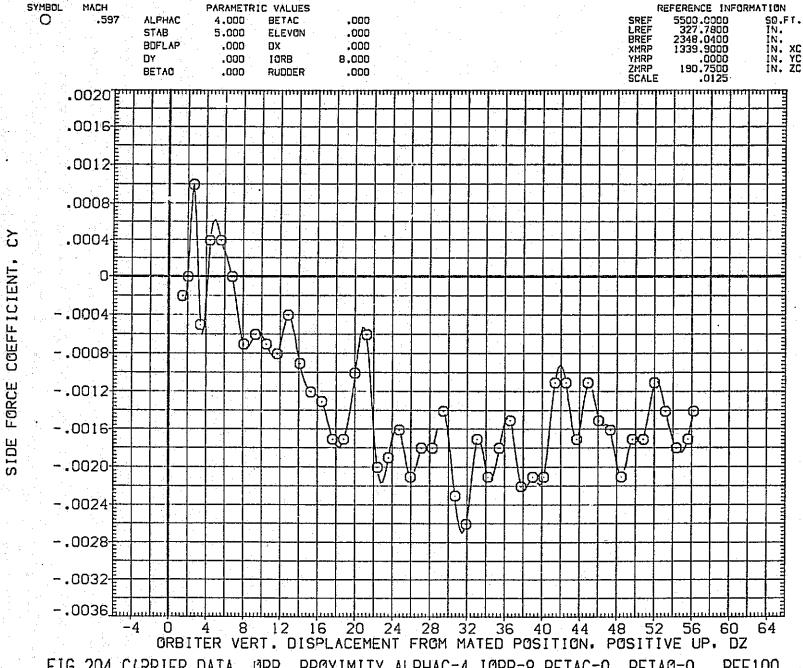
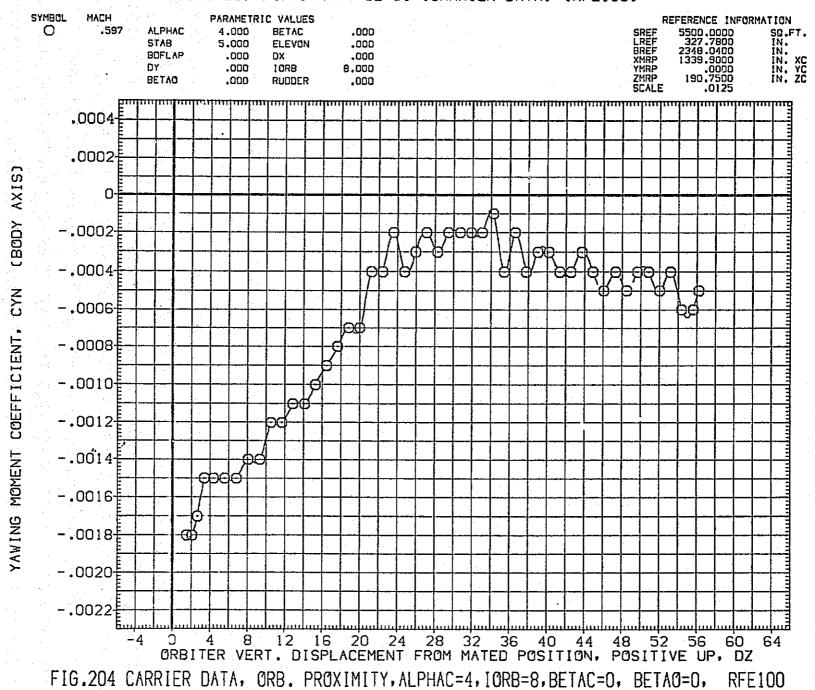
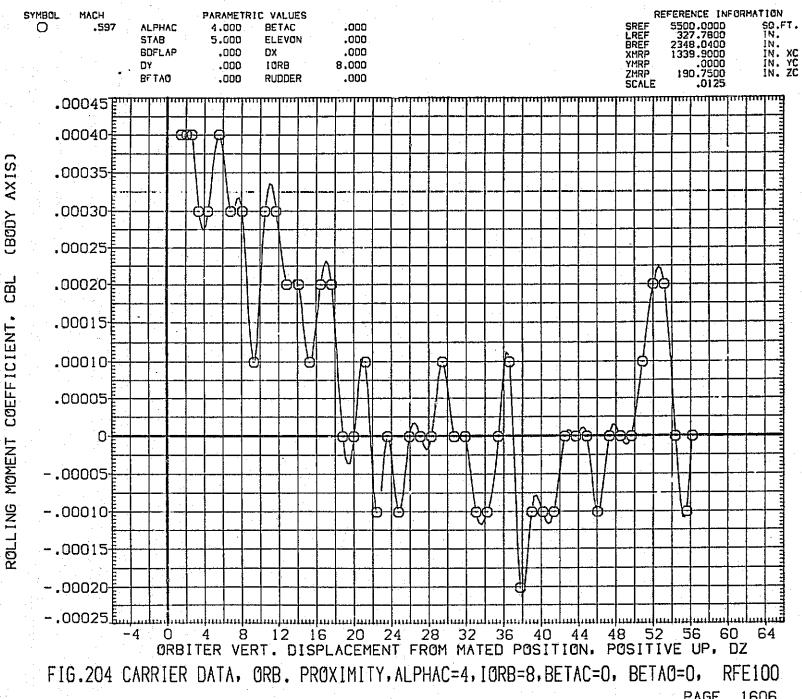


FIG.204 CARRIER DATA, URB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE100

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE100)



LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE100)



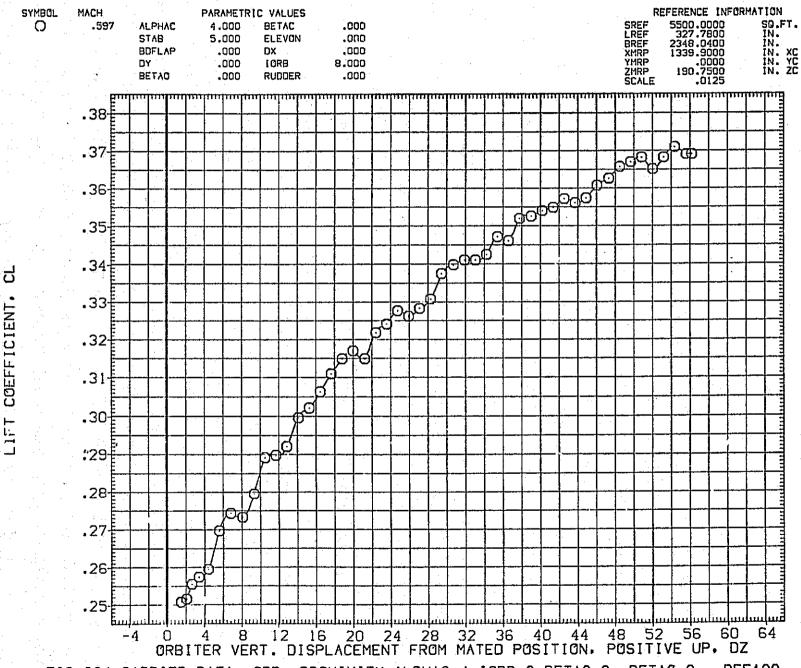


FIG.204 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE100

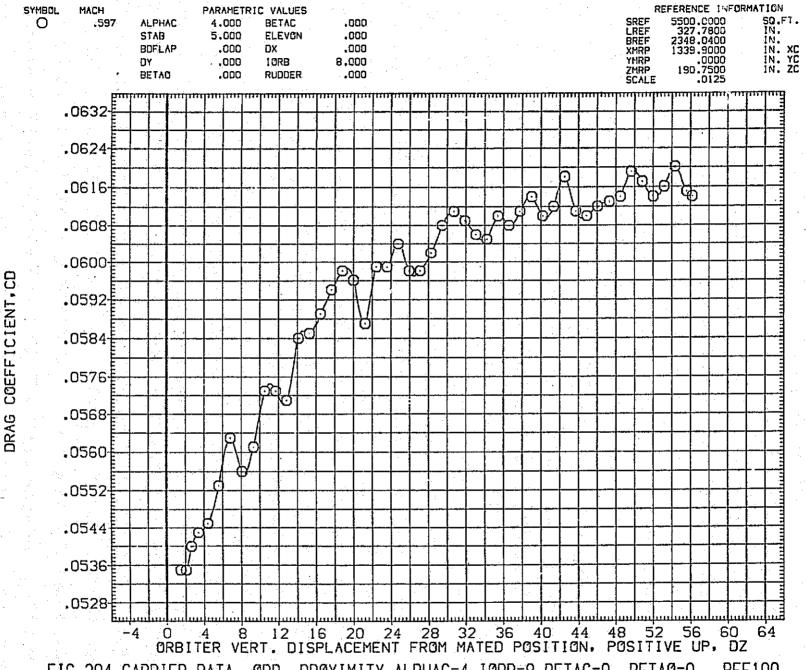
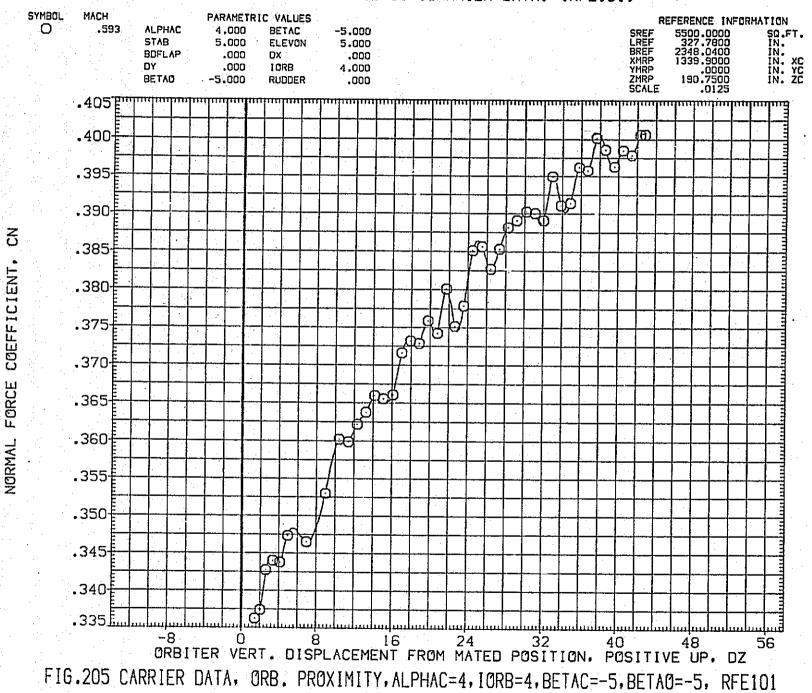


FIG.204 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE100

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)

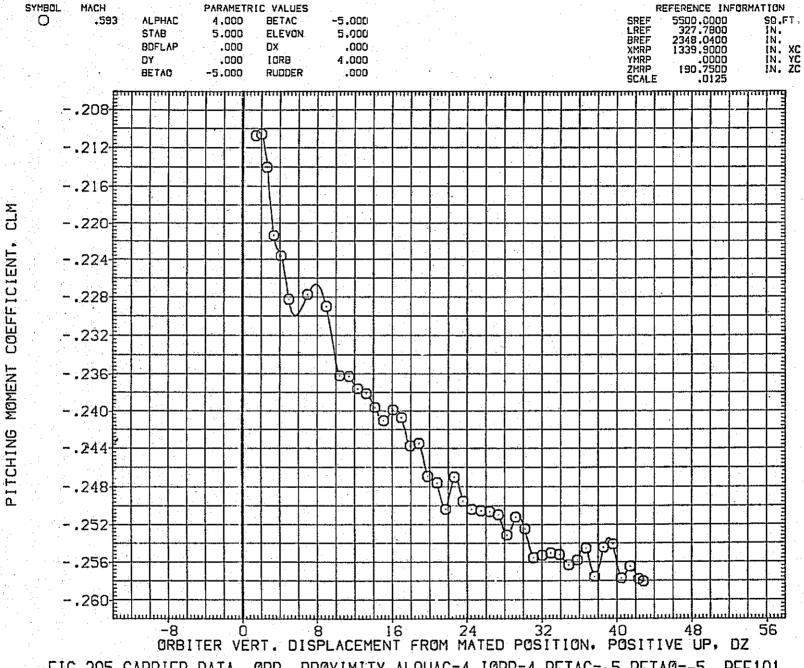
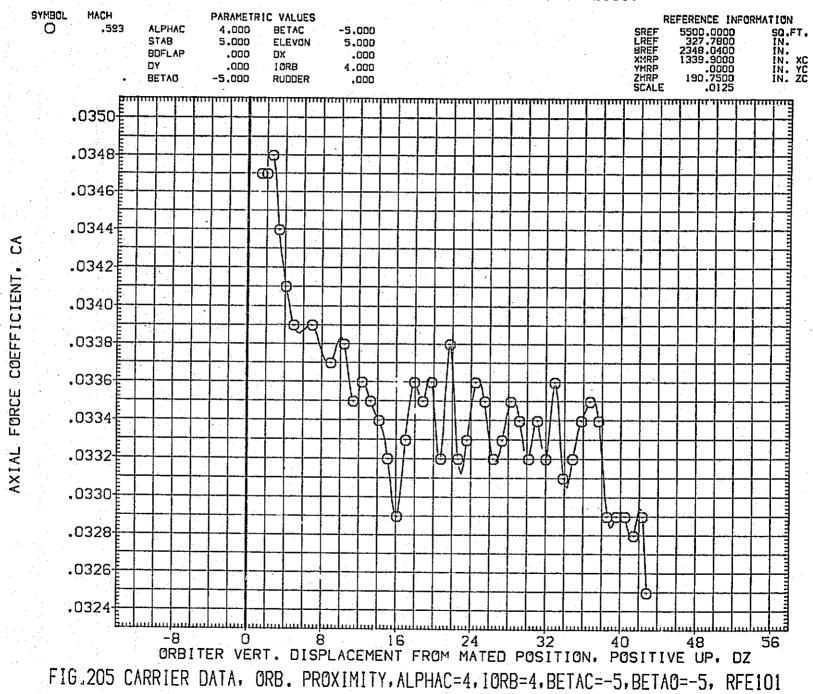
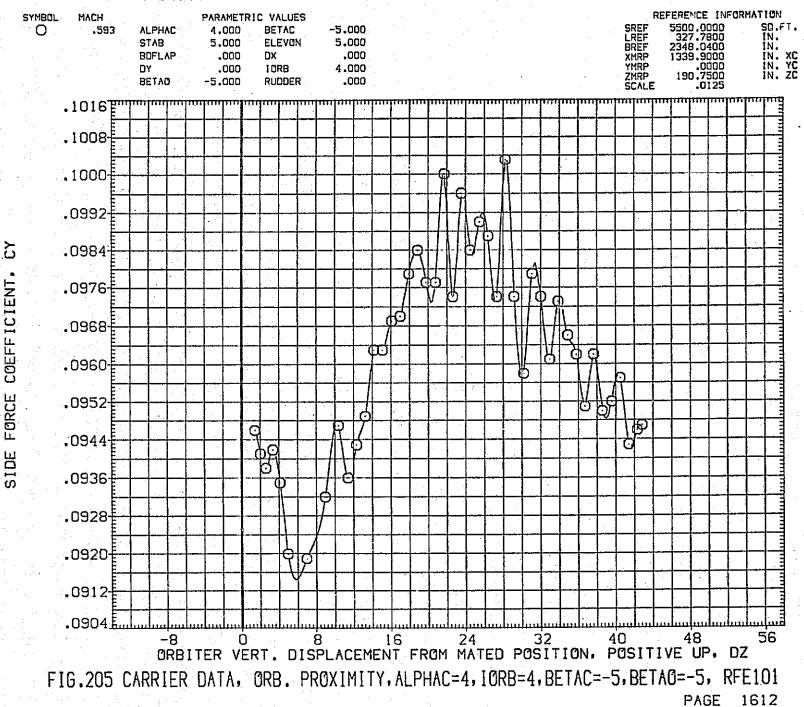


FIG.205 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=-5, BETAO=-5, RFE101
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)

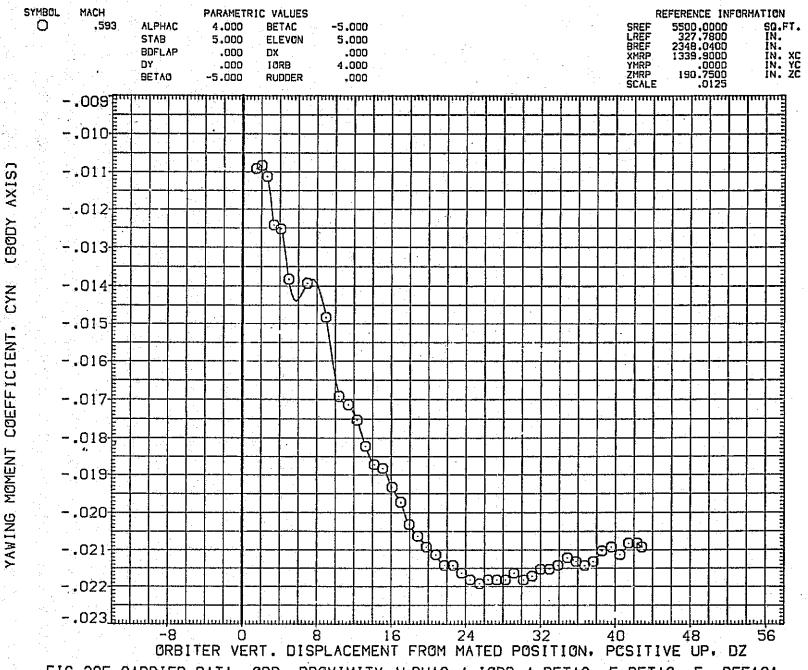
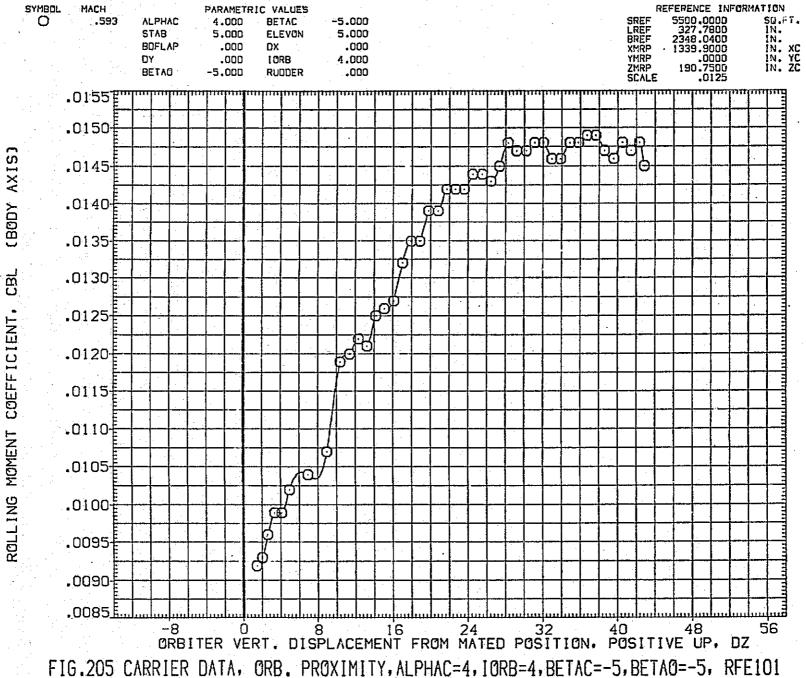


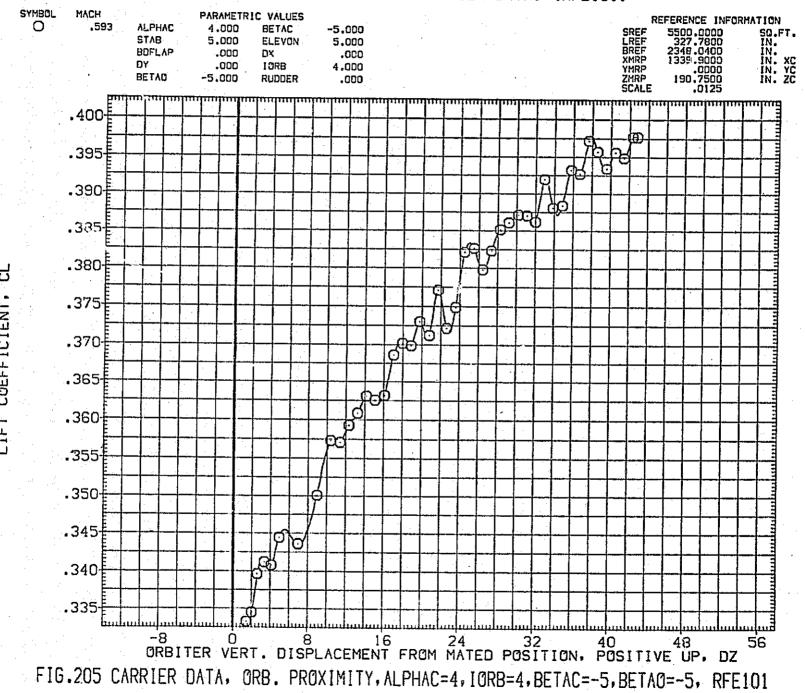
FIG.205 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=-5, BETAO=-5, RFE101
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE101)



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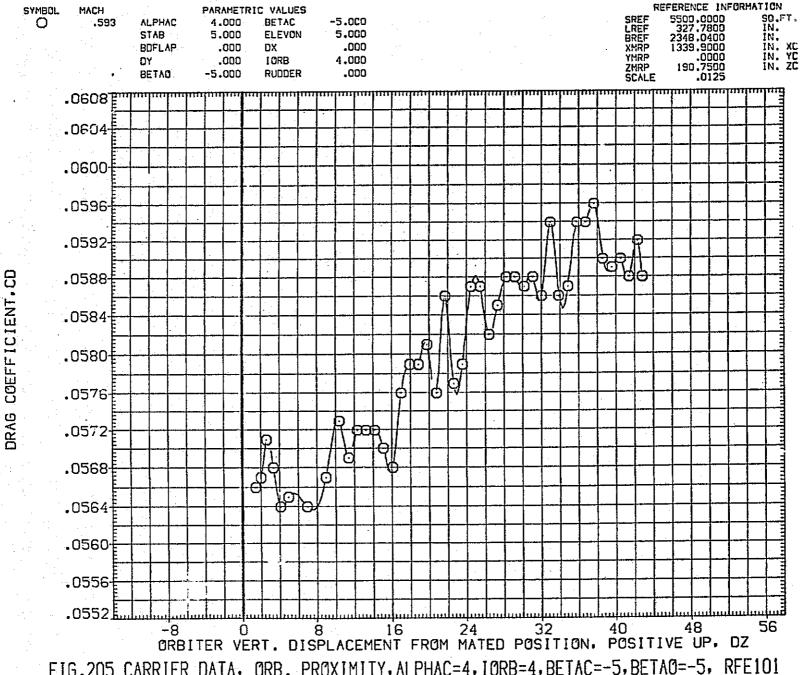


FIG.205 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=-5, BETAO=-5, RFE101 PAGE 1616

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE102)

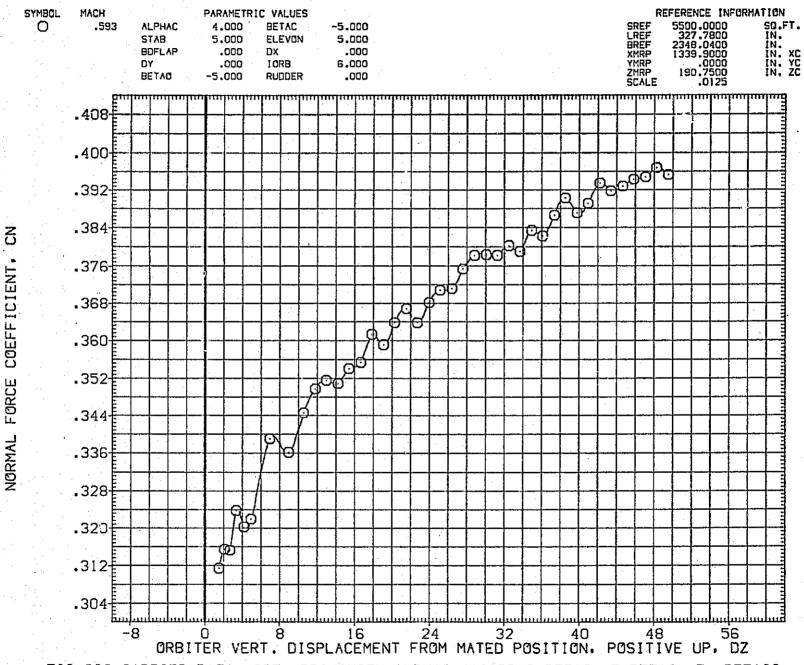


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102

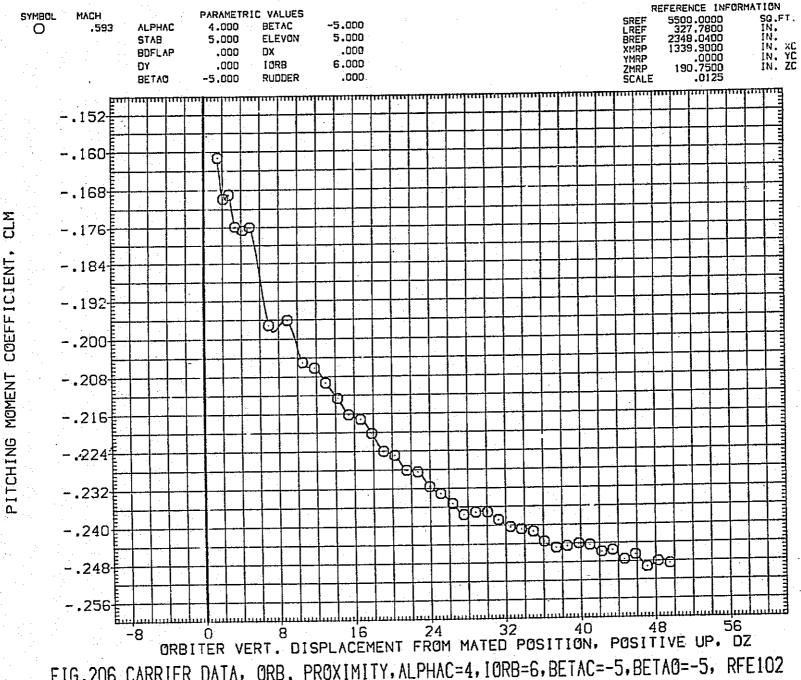


FIG. 206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102 PAGE 1618

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE102)

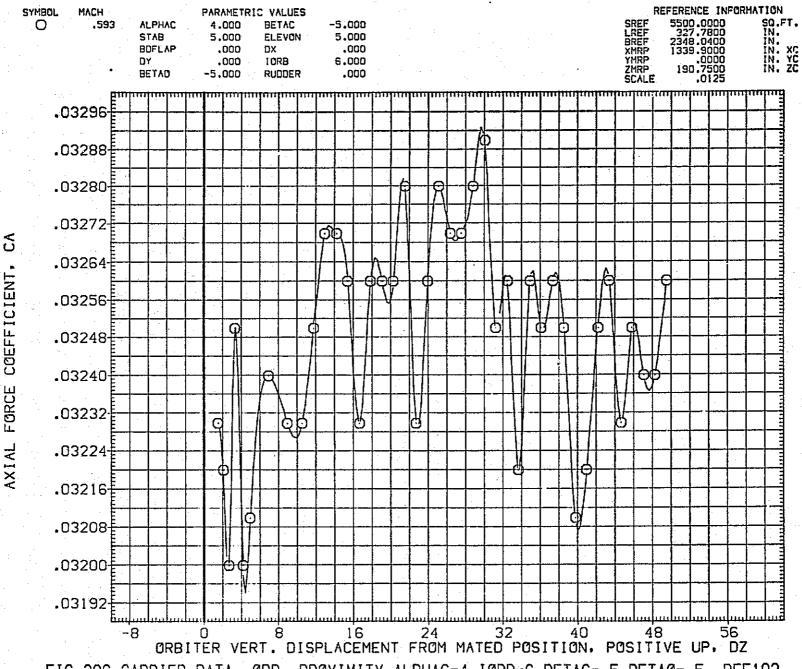


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102

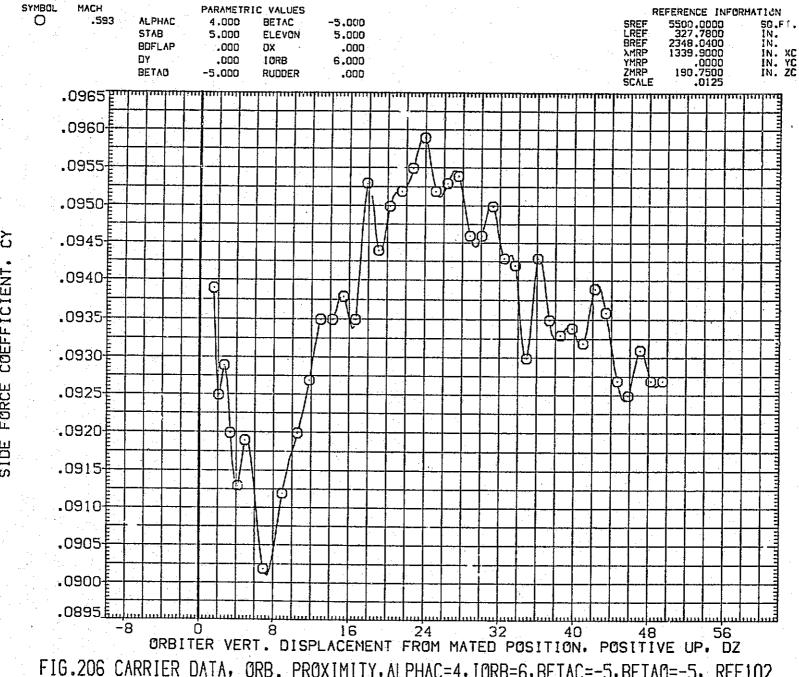


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102 PAGE 1620

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE102)

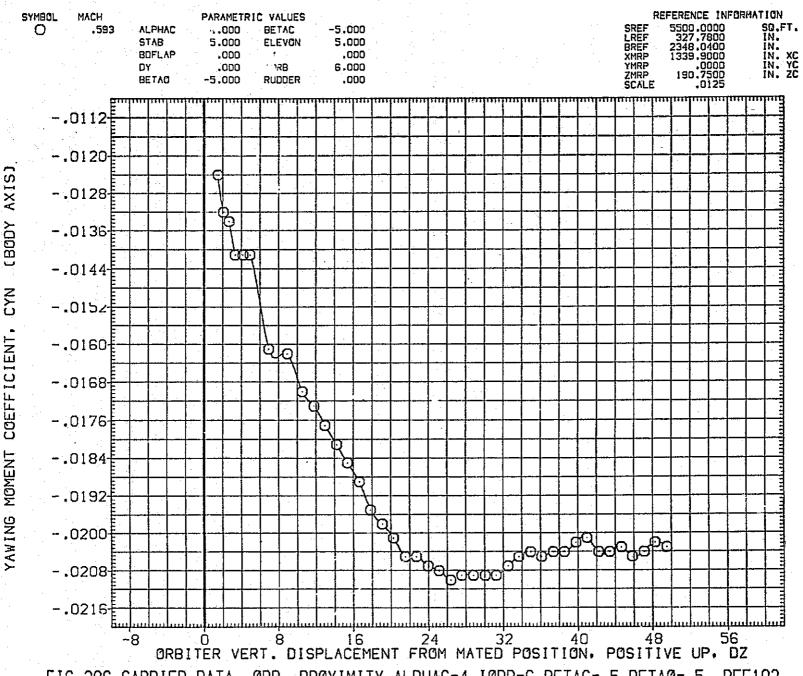


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE102)

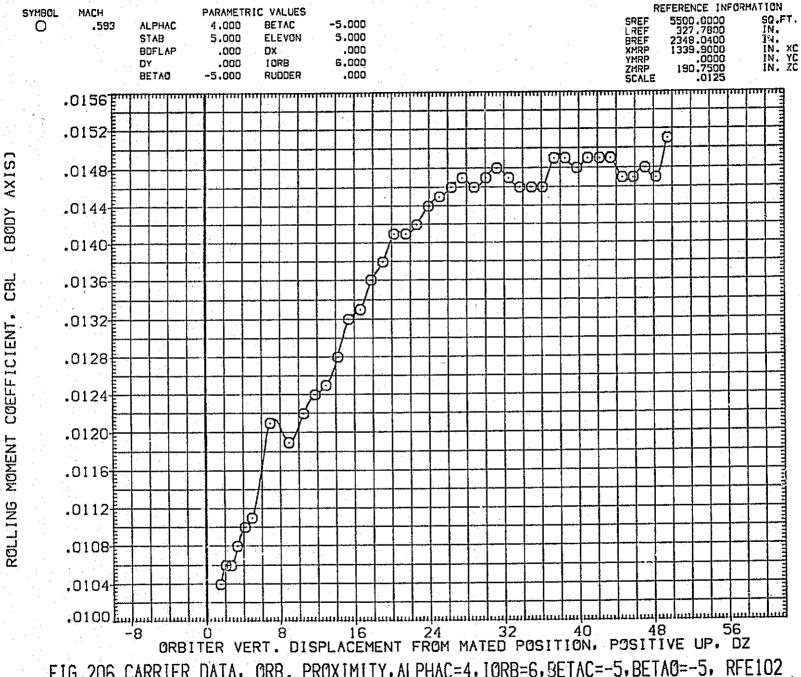
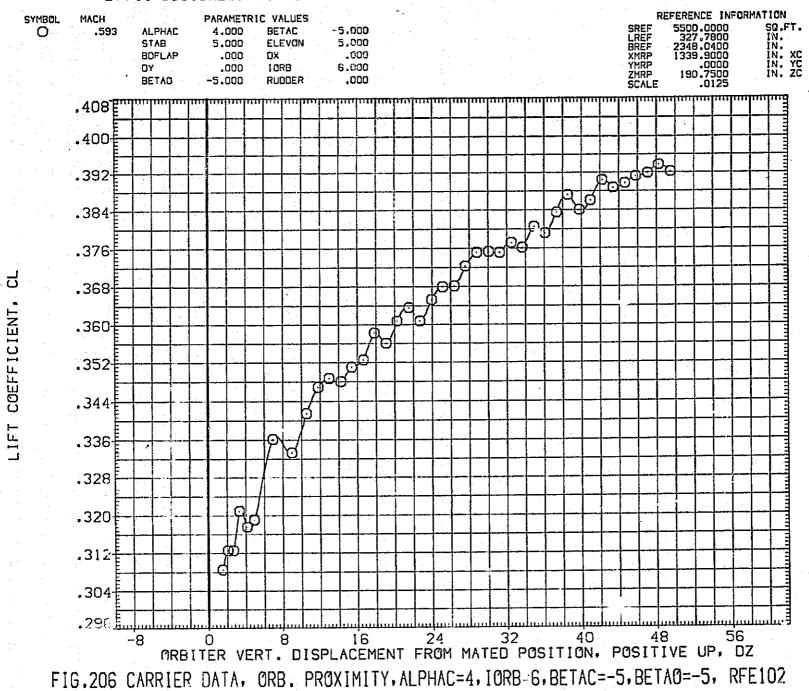


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102 PAGE 1622

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE102)



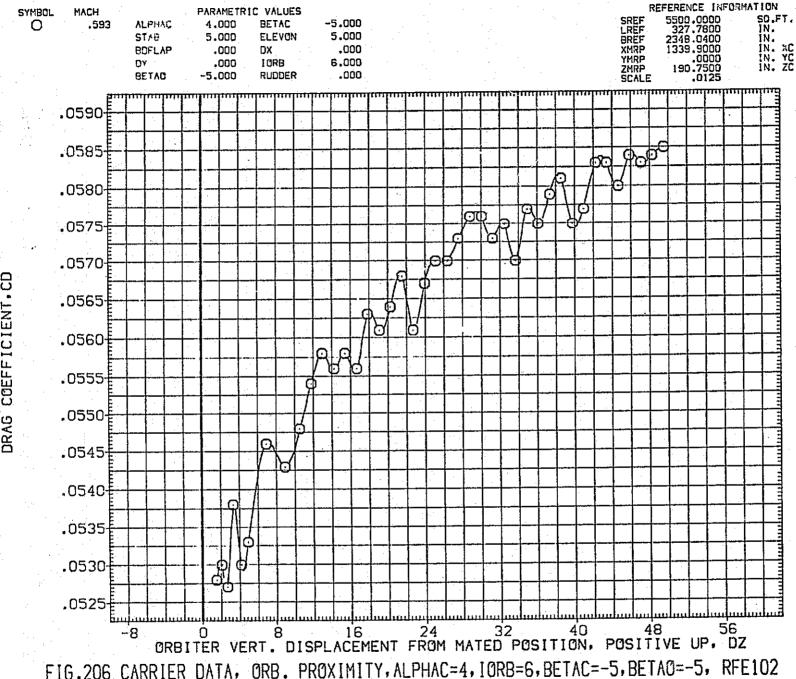
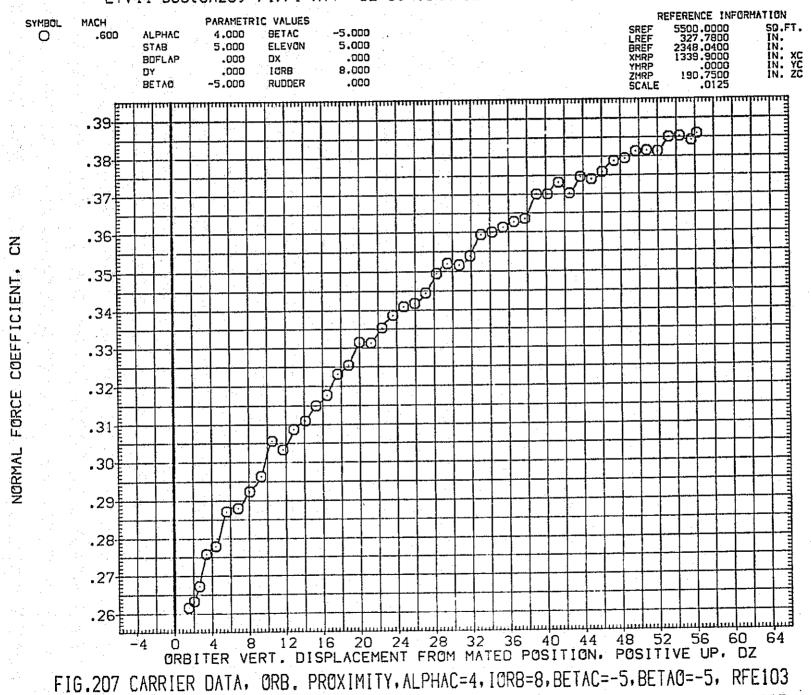


FIG.206 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=-5, BETAO=-5, RFE102 PAGE 1624

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE103)



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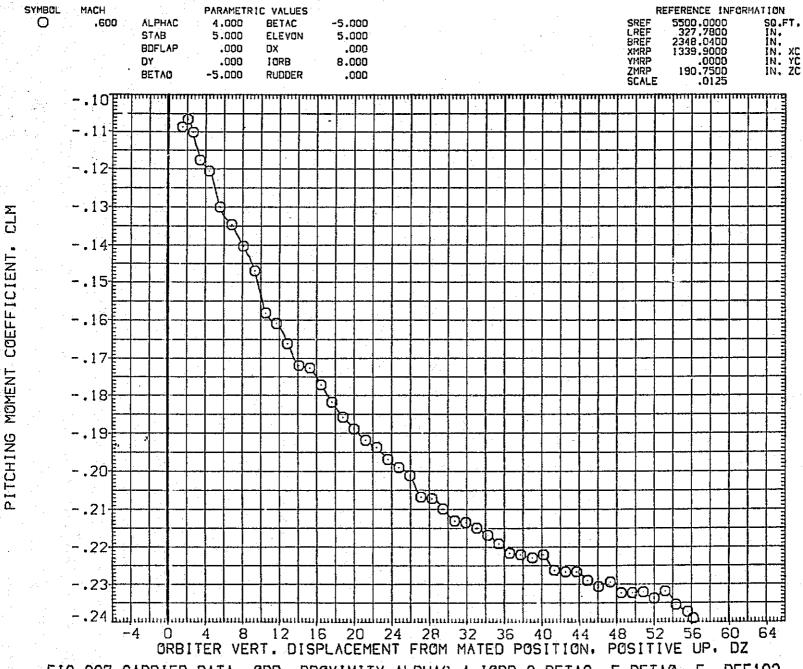
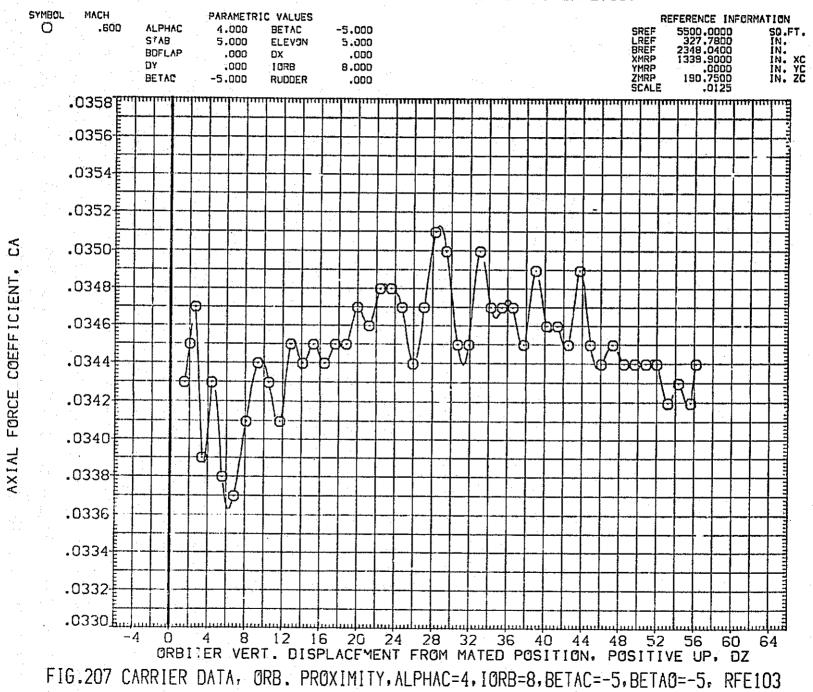


FIG.207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4. IORB=8.BETAC=-5.BETAO=-5. RFE103

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE103)



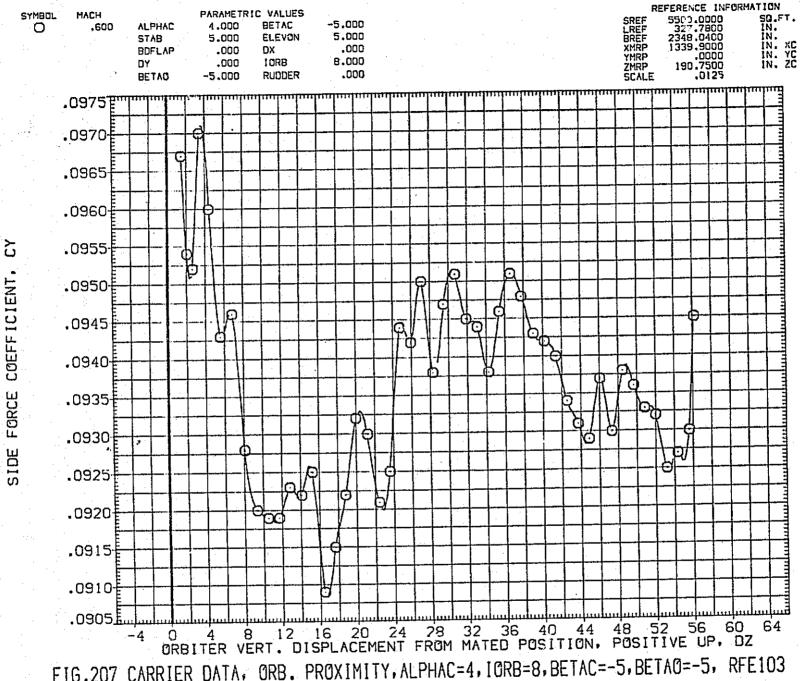


FIG.207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=-5, BETAO=-5, RFE103 PAGE 1628

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE103)

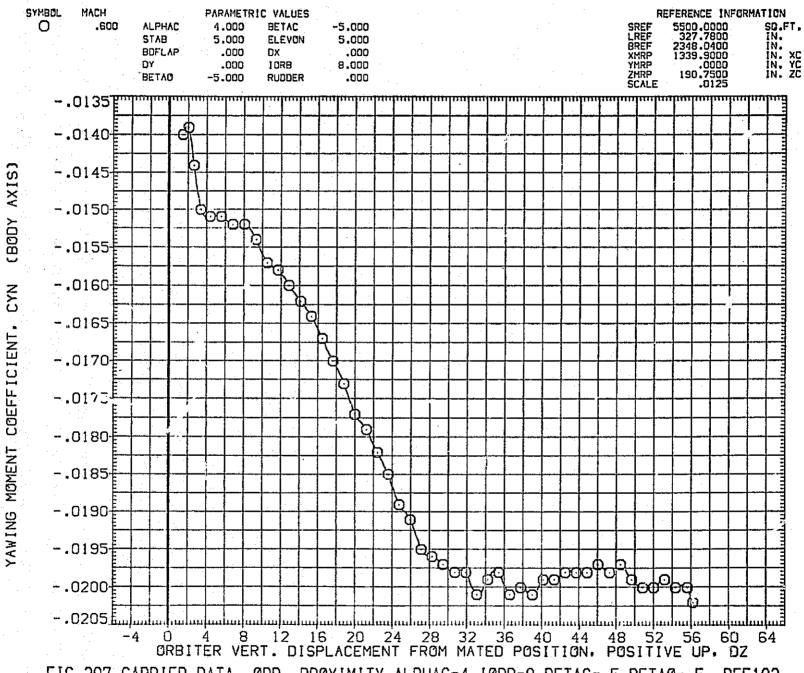


FIG.207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=-5, BETAO=-5, RFE103

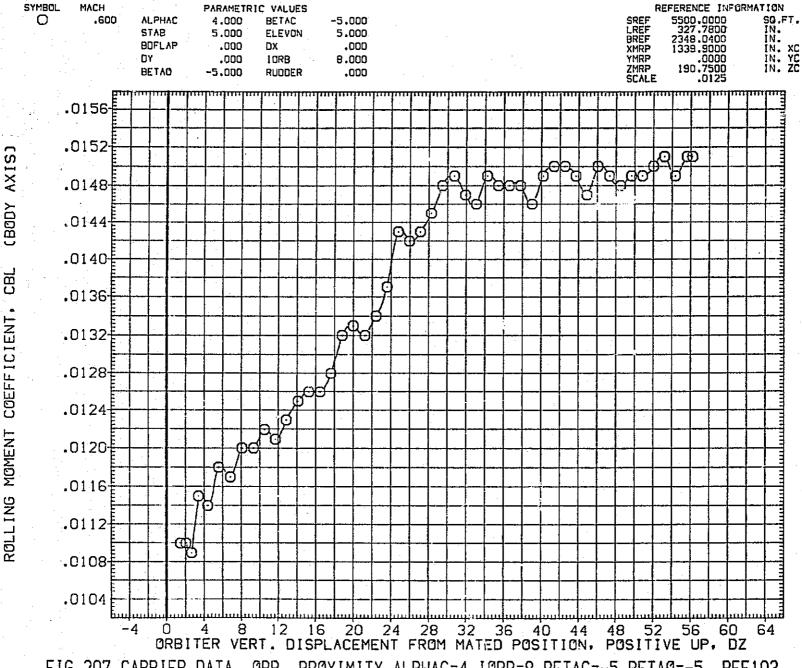


FIG.207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=-5, BETAO=-5, RFE103

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE103)

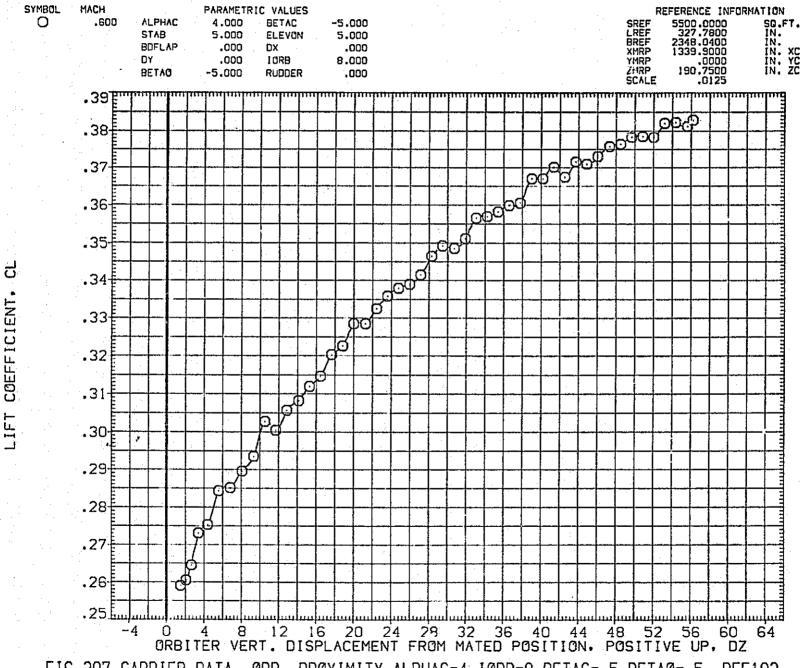


FIG.207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=-5, BETAO=-5, RFE103

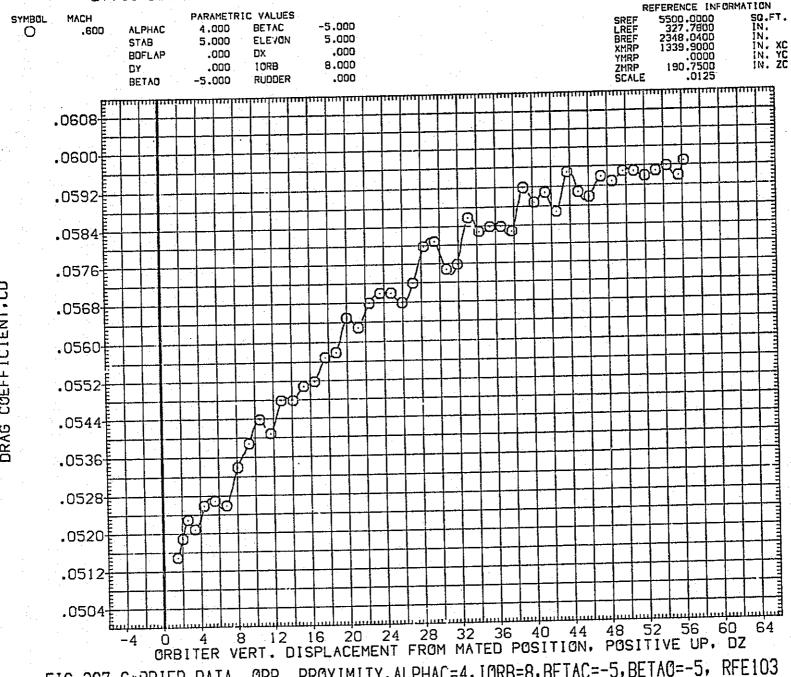


FIG. 207 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=-5, BETAO=-5, RFE103 PAGE 1632

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE104)

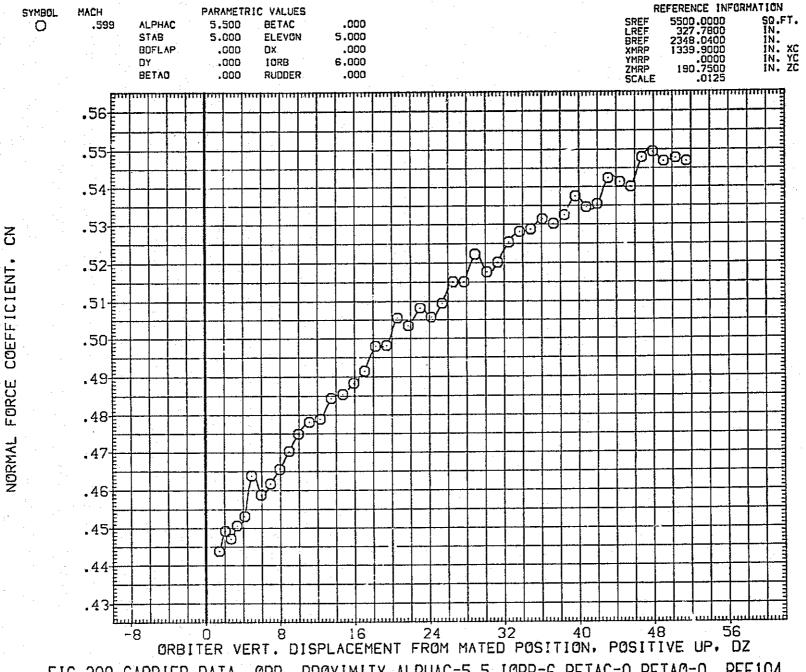


FIG. 208 CARRIER DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104

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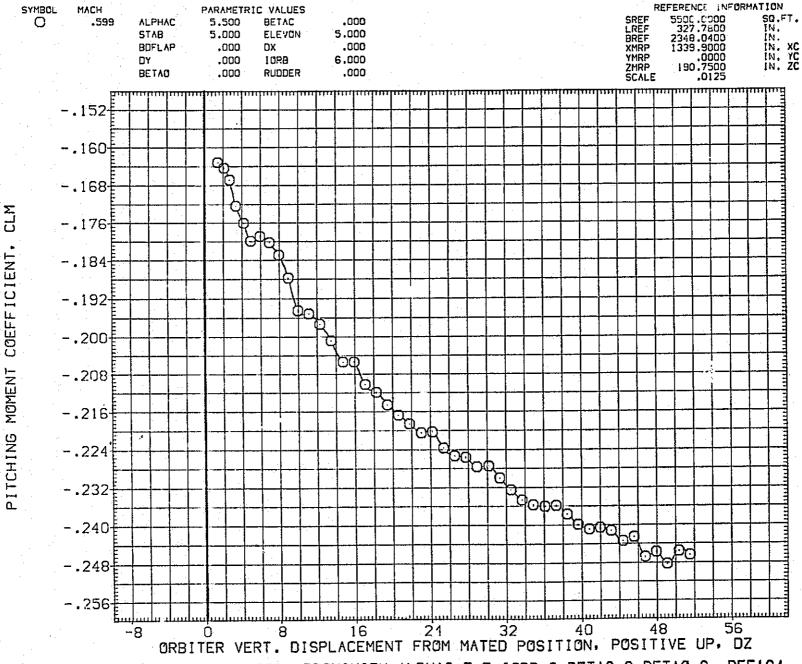
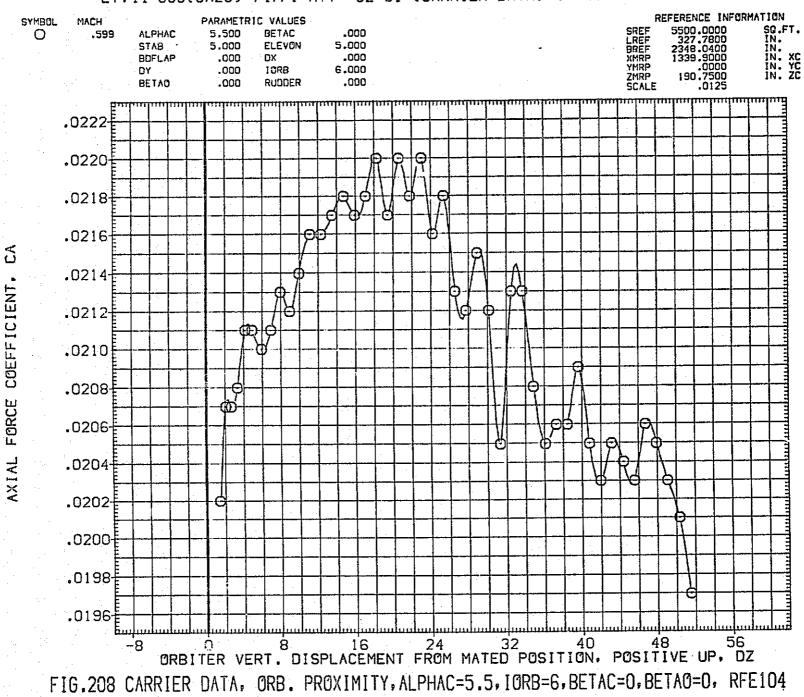


FIG. 208 CARRIER DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE104)



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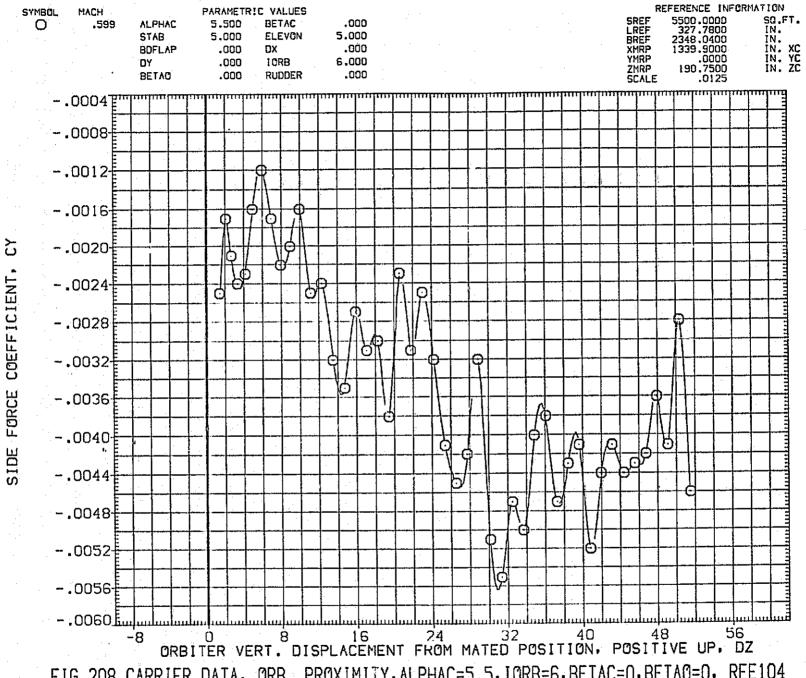


FIG.208 CARRIER DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104 1636 PAGE

## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE104)

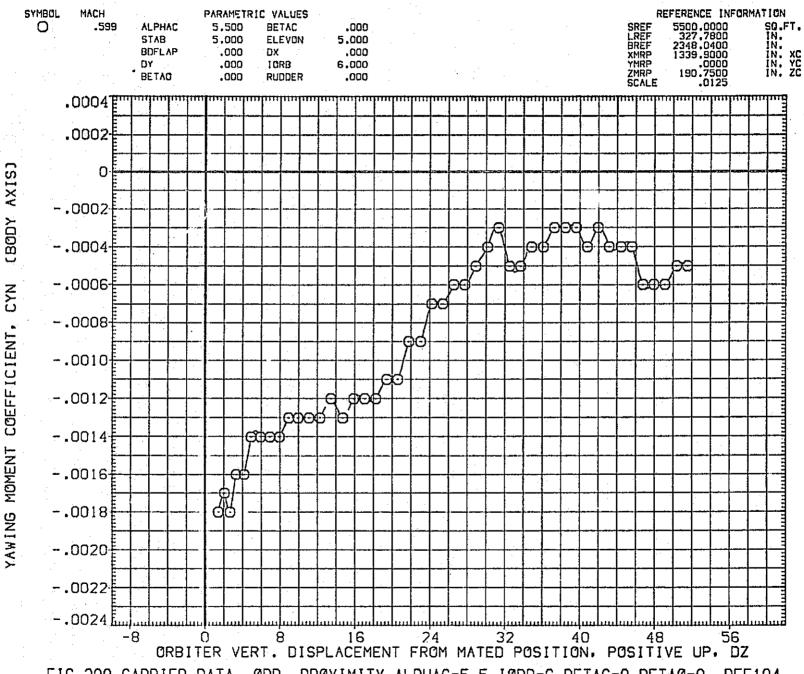
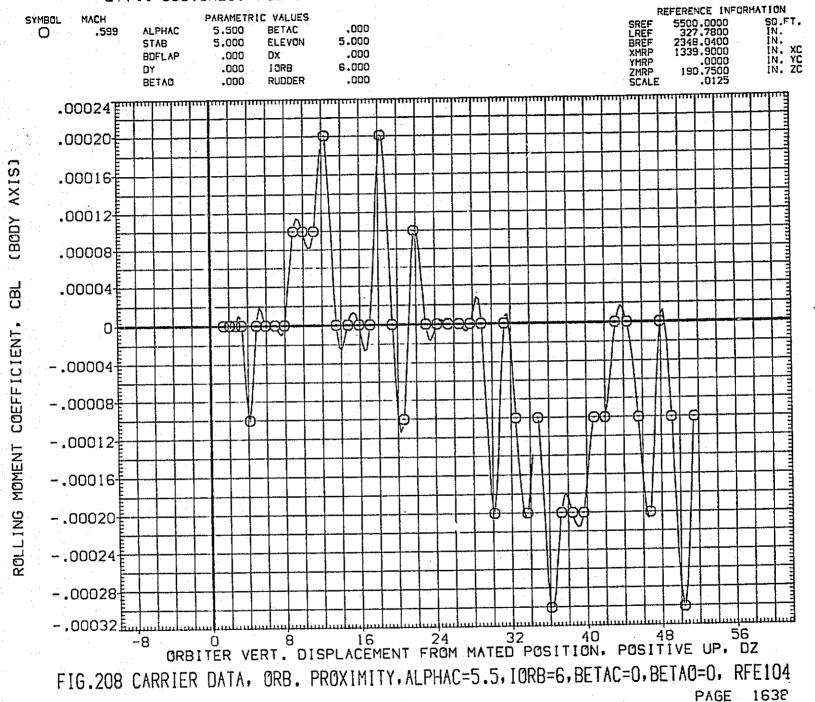


FIG.208 CARRIER DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104



LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE104)

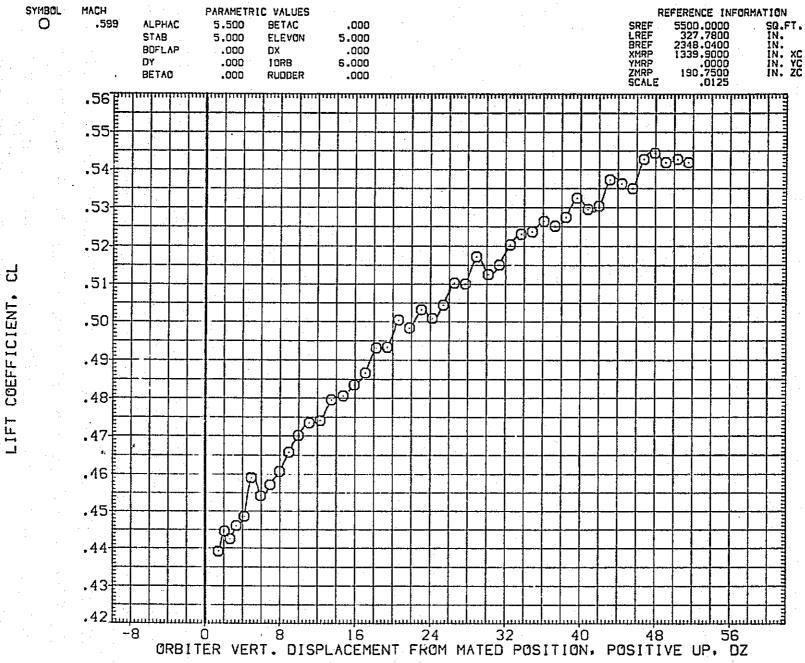


FIG.208 CARRIFR DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104

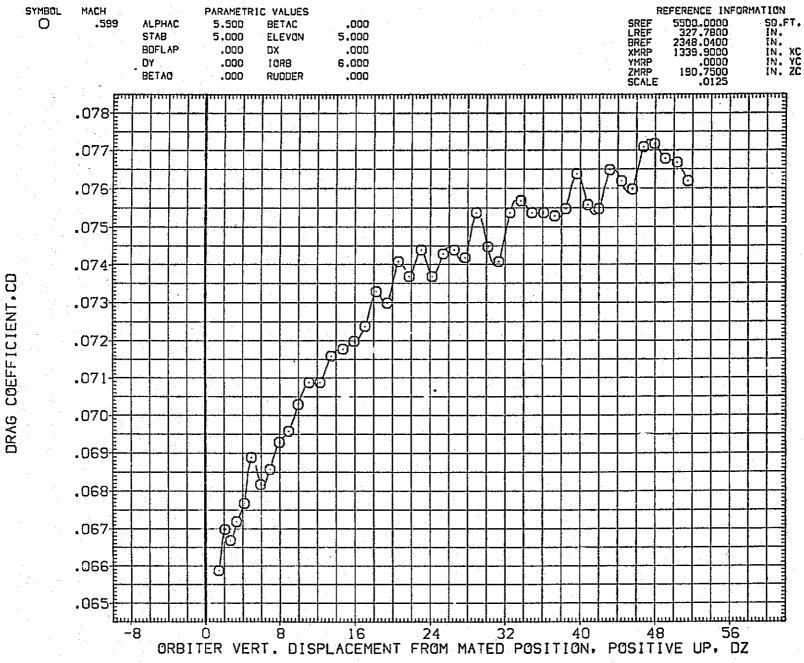
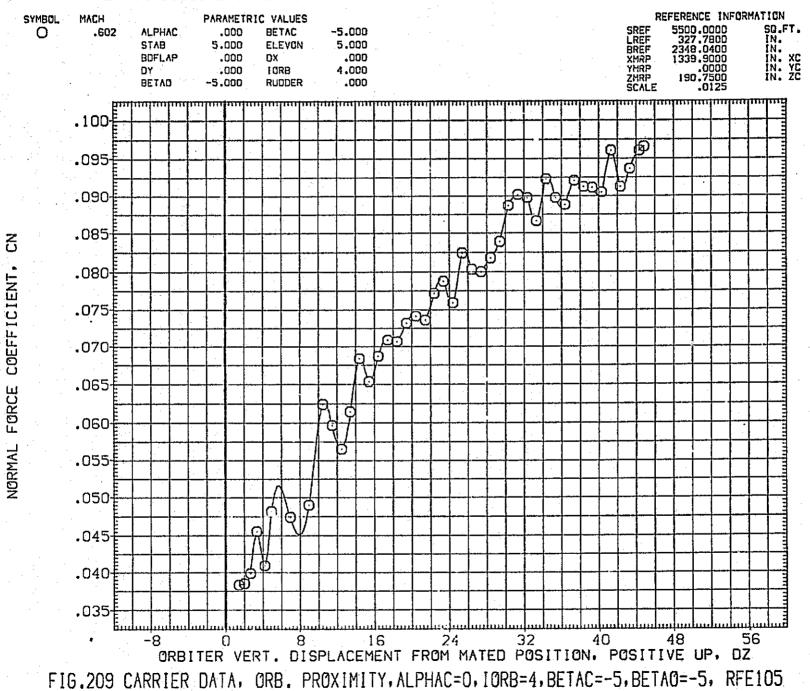


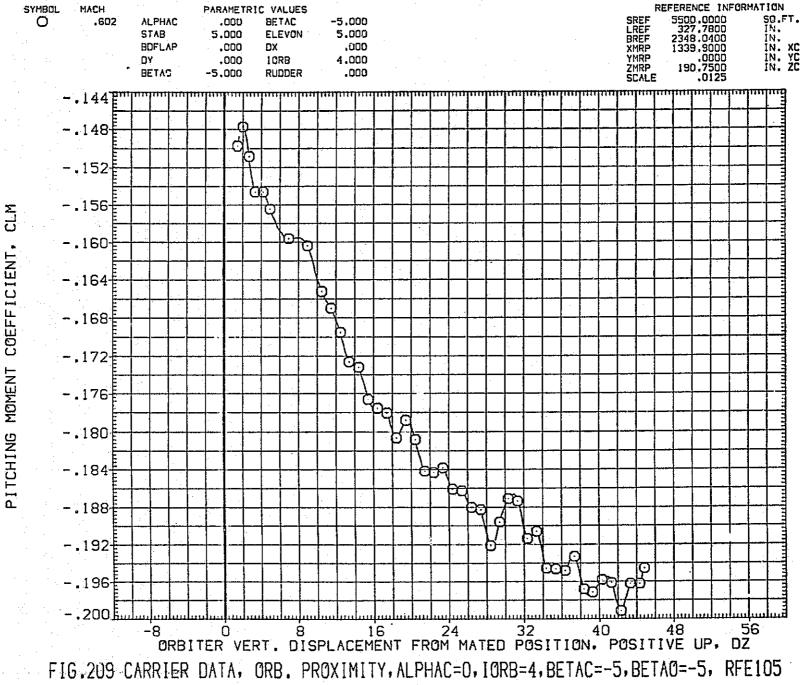
FIG.208 CARRIER DATA, ORB. PROXIMITY, ALPHAC=5.5, IORB=6, BETAC=0, BETAO=0, RFE104

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)



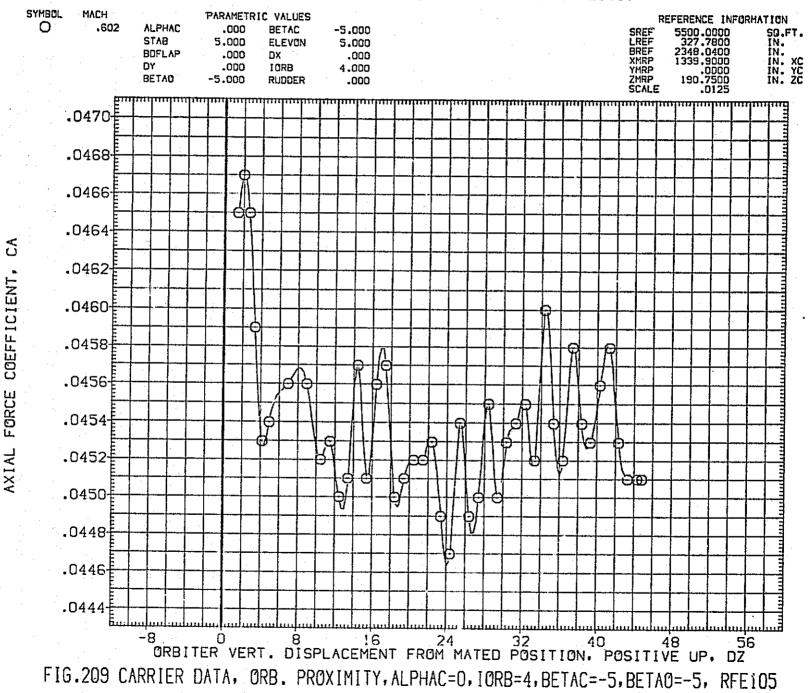
1641

LTV44-559[CA26] 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)



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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)



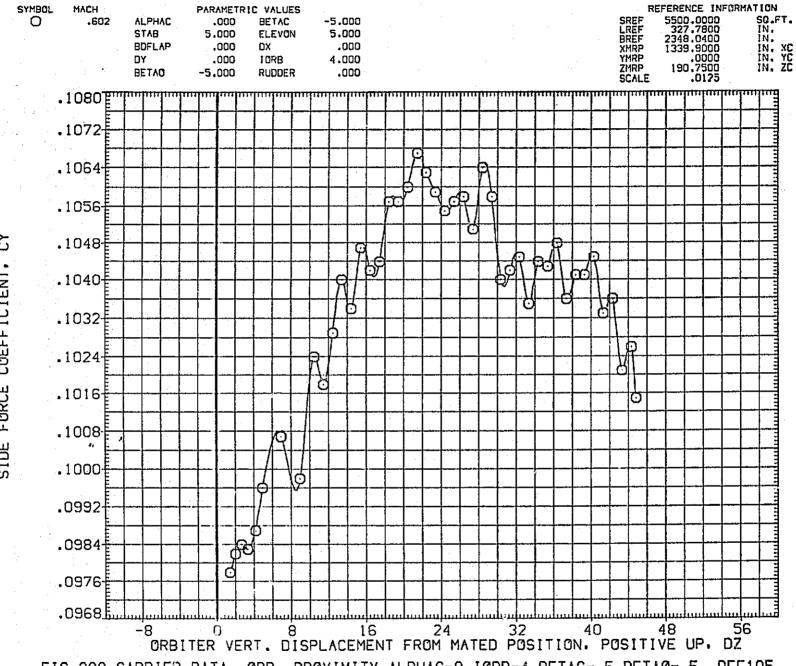
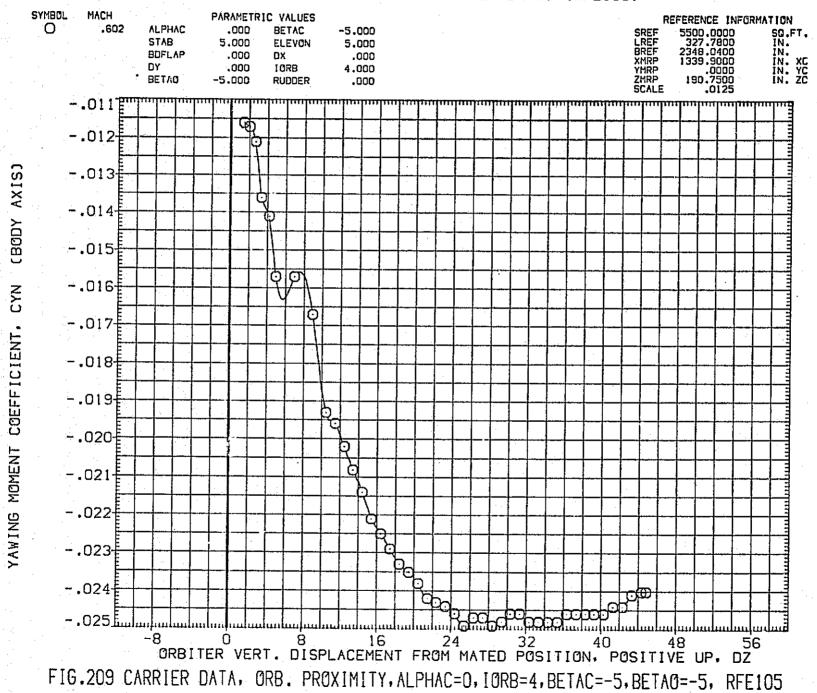


FIG.209 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=-5, BETAO=-5, RFE105

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)



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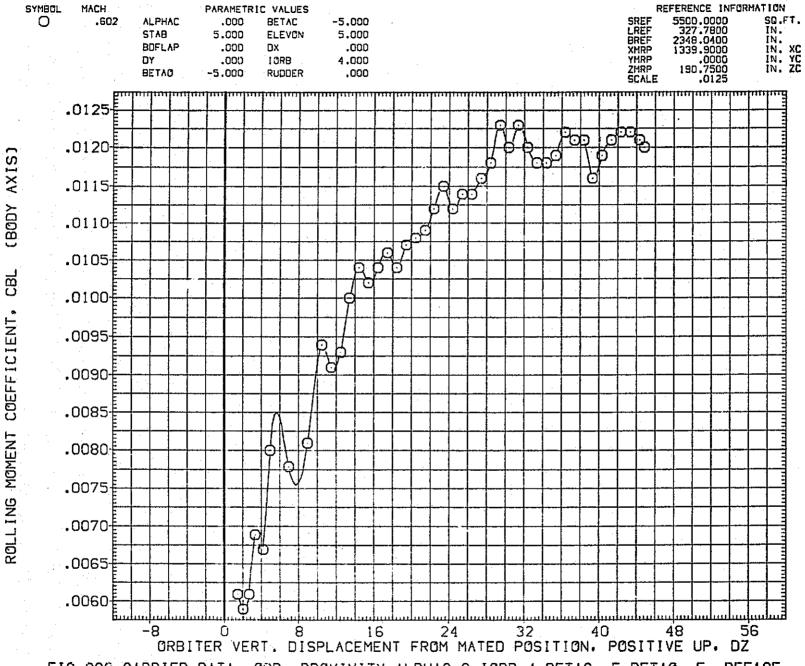


FIG.209 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=-5, BETAO=-5, RFE105
PAGE 1646

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)

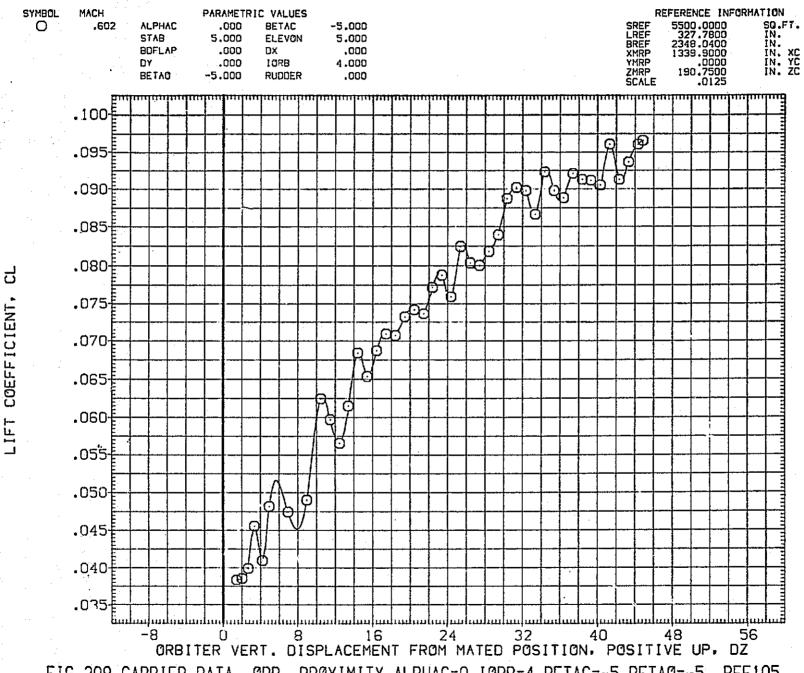


FIG.209 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=-5, BETAO=-5, RFE105

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE105)

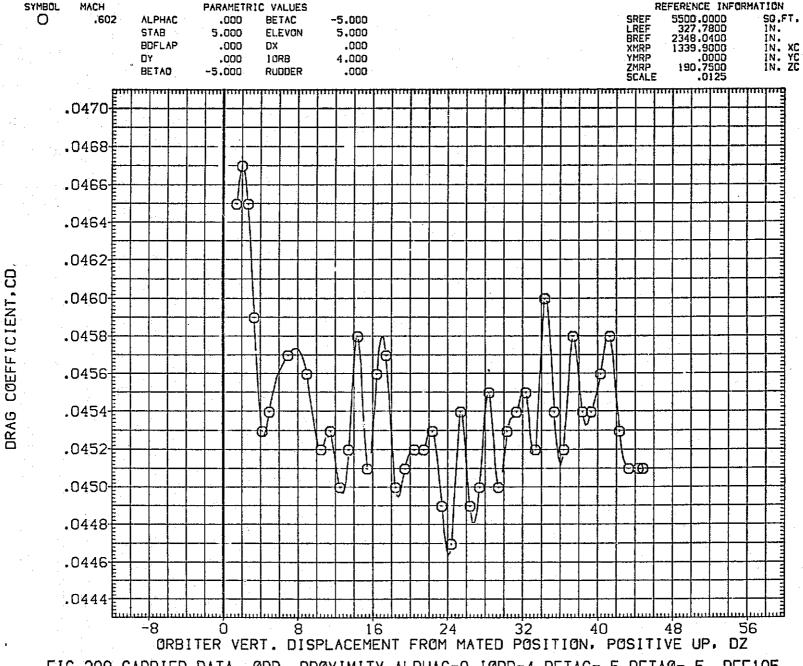


FIG.209 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=-5, BETAO=-5, RFE105

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE106)

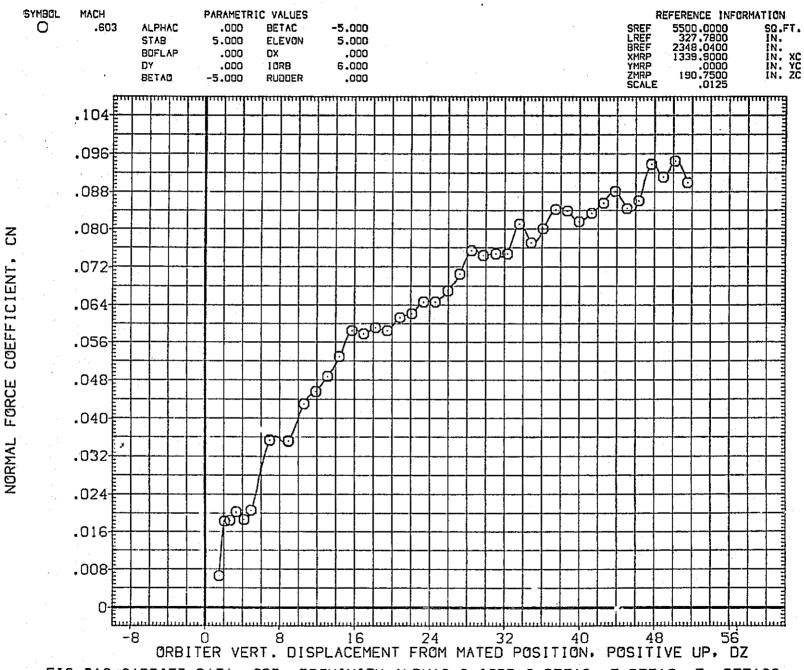


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106

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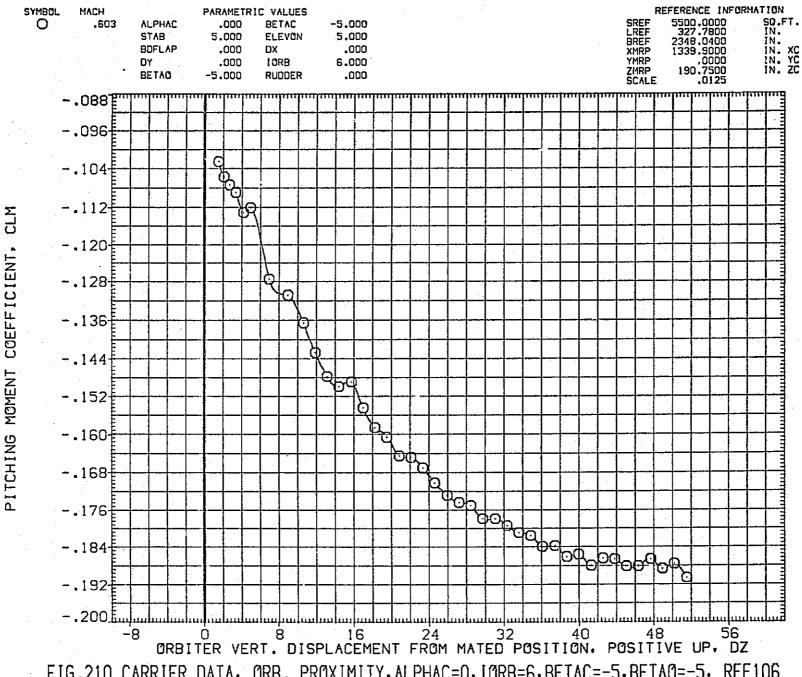


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE106)

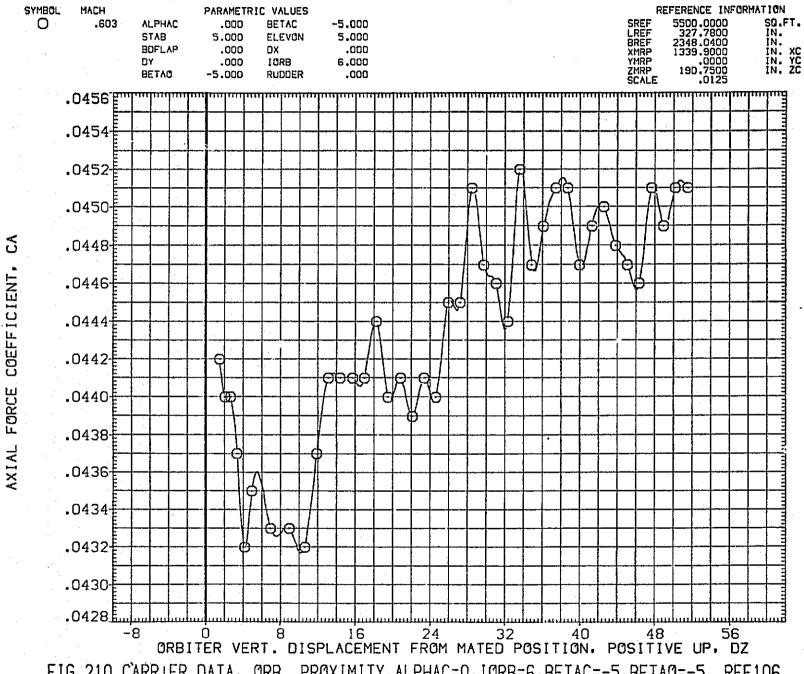


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE106)

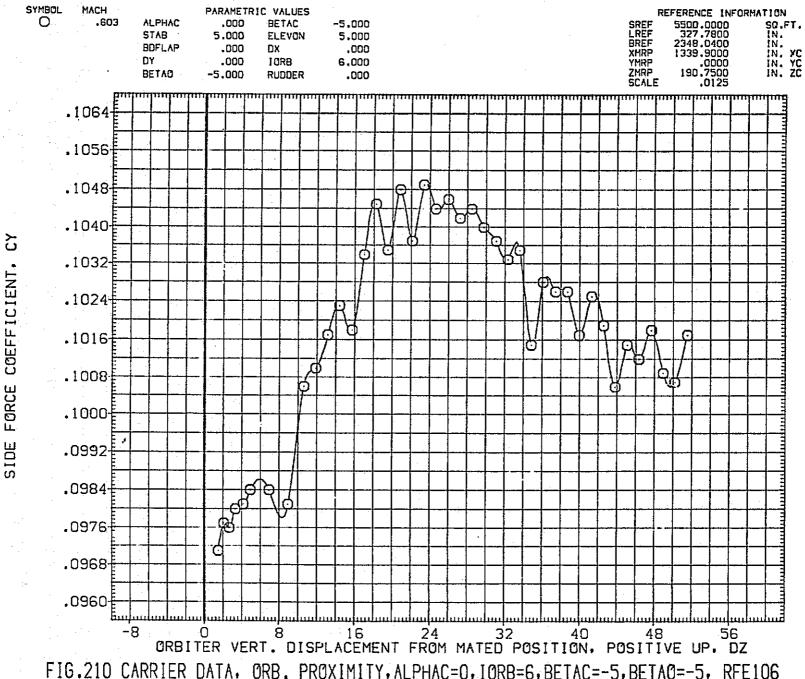
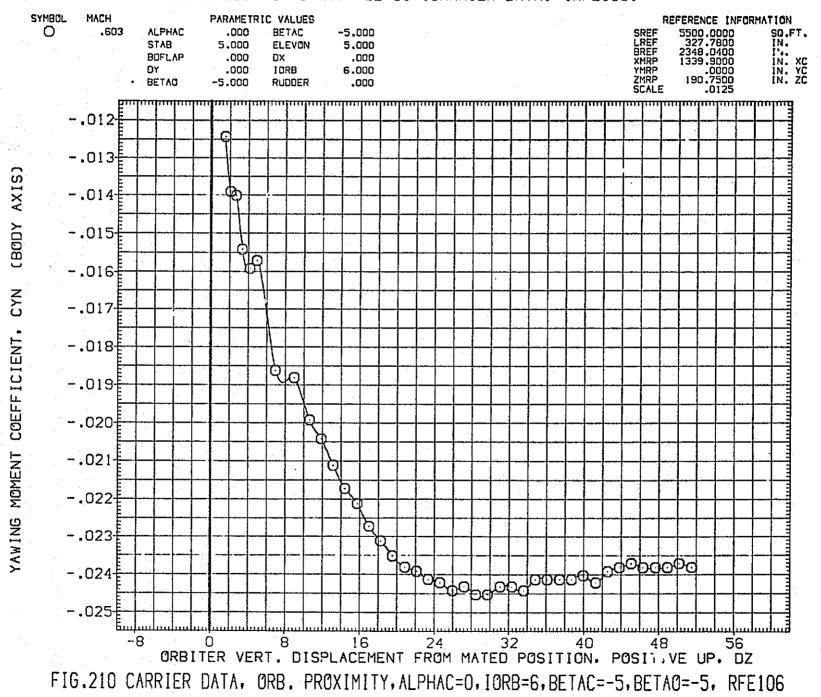


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106 PAGE 1652

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE106)



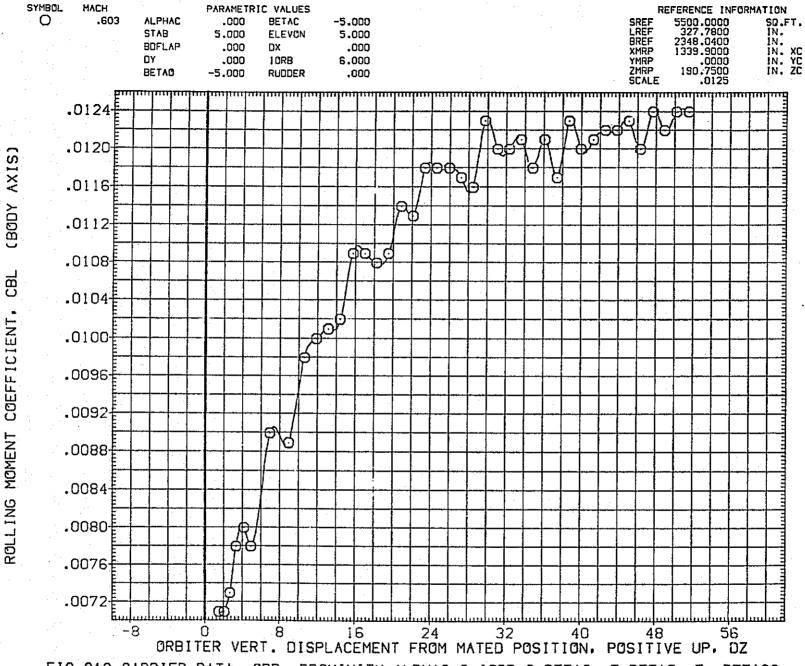


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106
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FIG.210 CARRIER DATA, ORB. PROXIMITY.ALPHAC=0,IORB=6,BETAC=-5,BETAO=-5, RFE106

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE106)

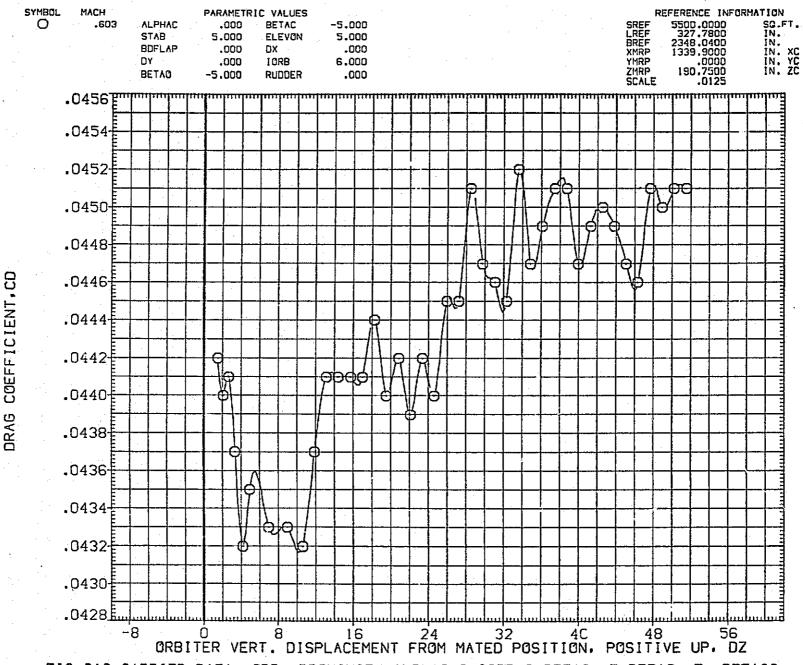


FIG.210 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=-5, BETAO=-5, RFE106
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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE107)

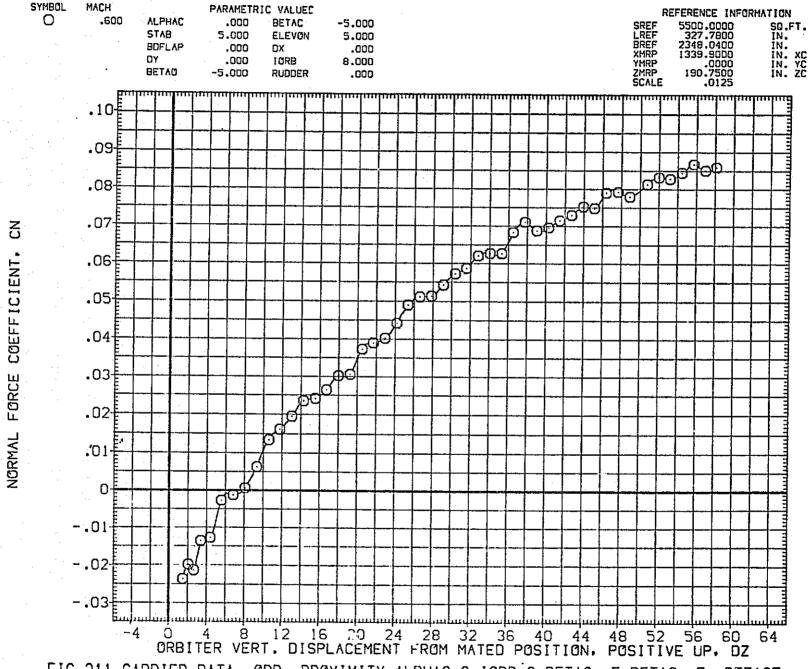


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

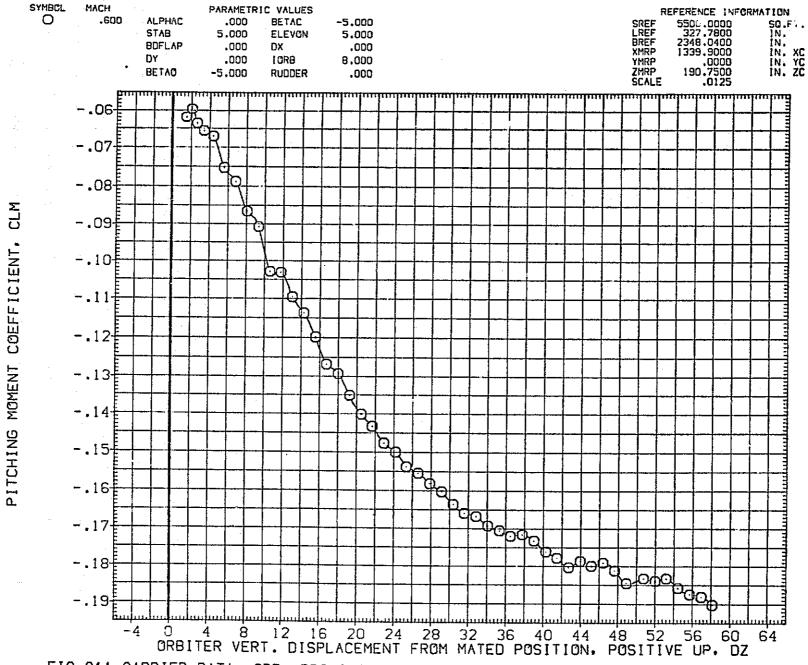


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8.BETAC=-5, BETAO=-5, RFE107

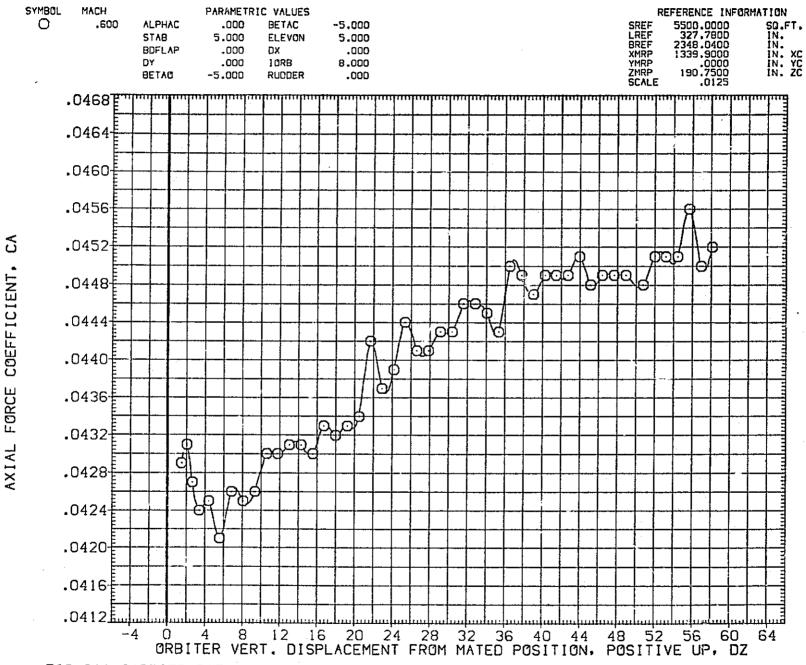


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

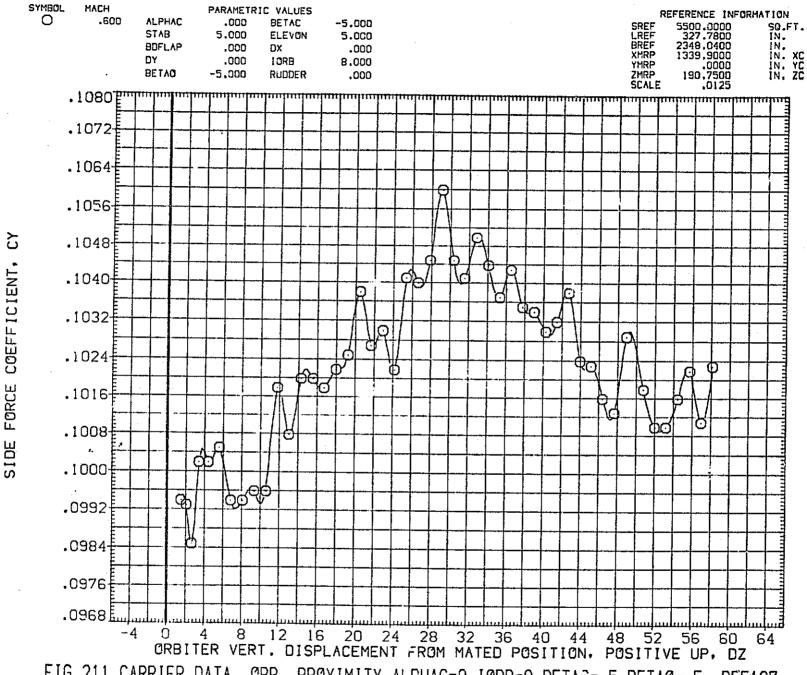


FIG.211 CARRIER\_DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE107)

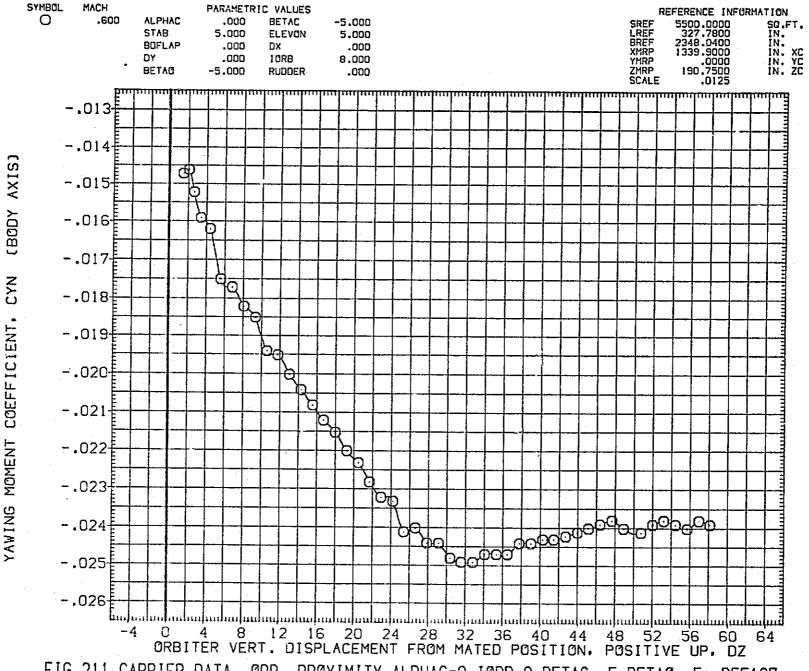


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

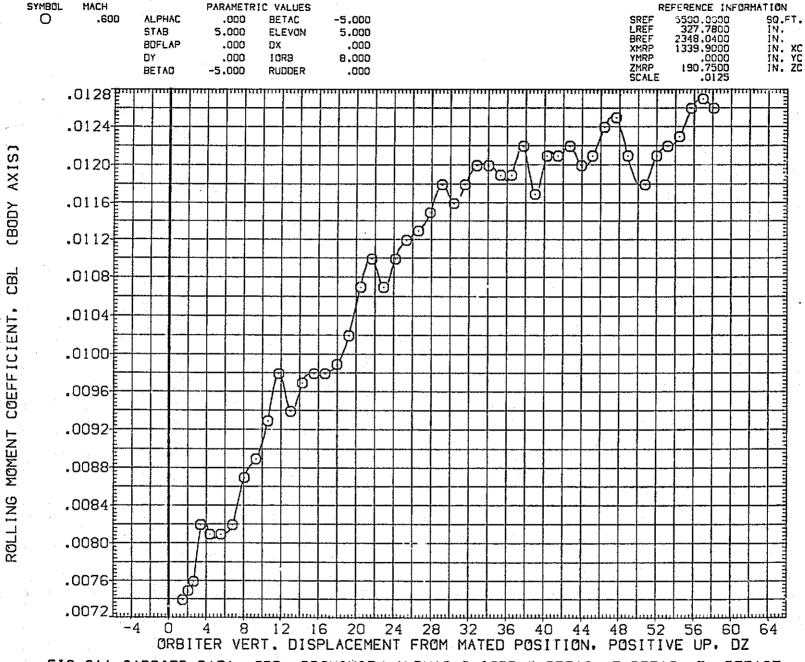


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, 10RB=8, BETAC=-5, BETAO=-5, RFE107

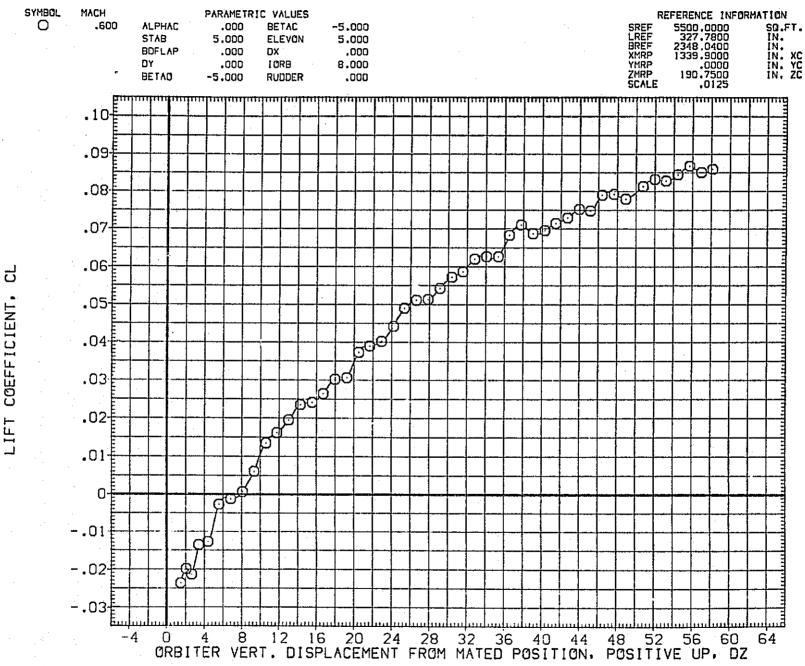


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE107)

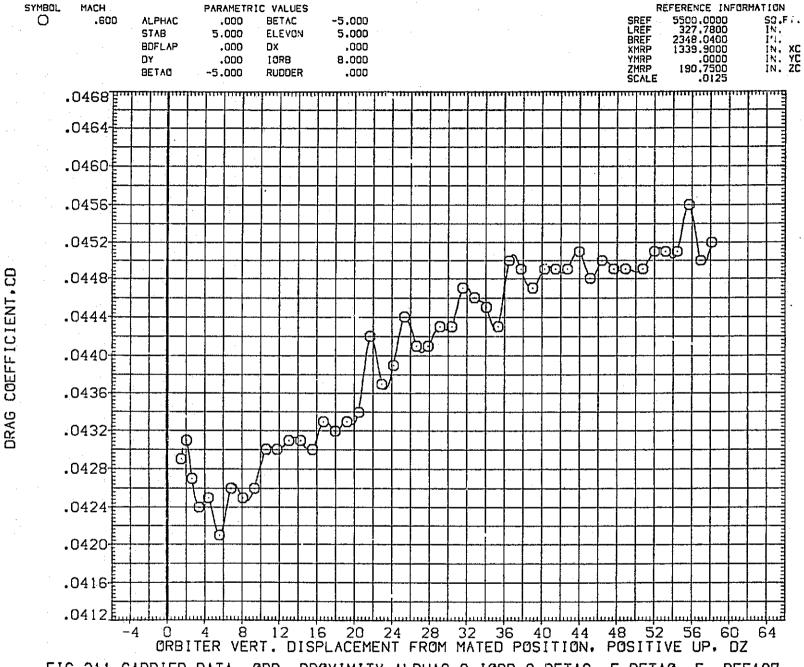


FIG.211 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=-5, BETAO=-5, RFE107

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE108)

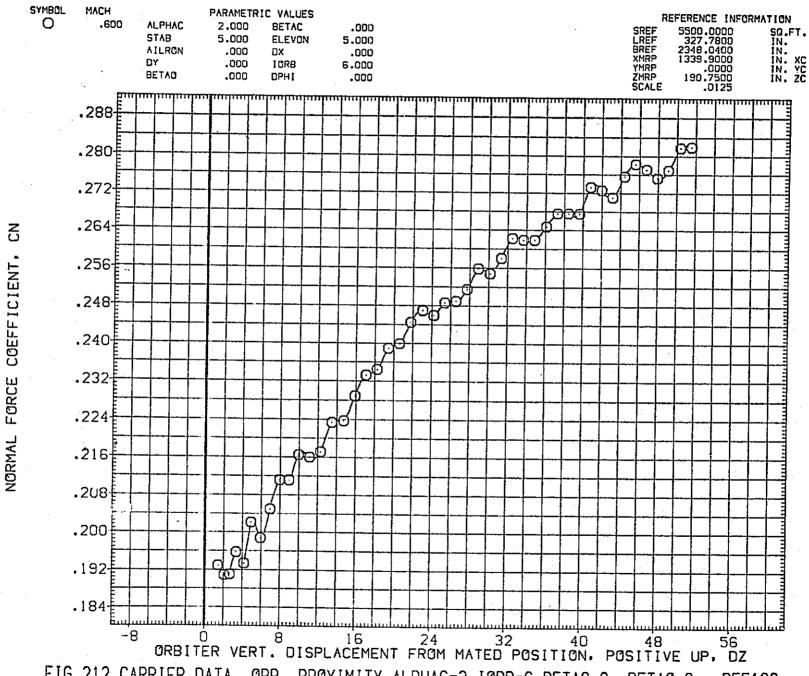


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0,

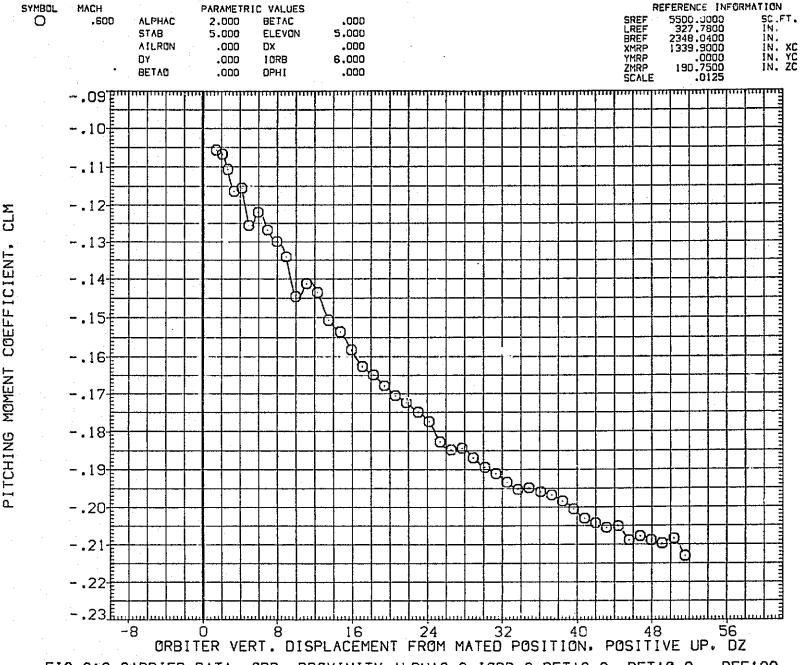


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE108)

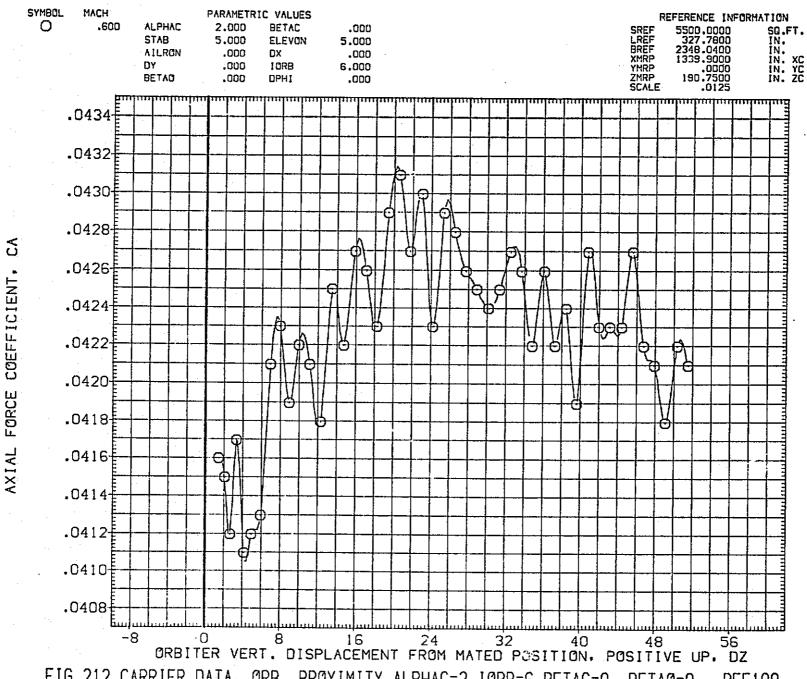


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

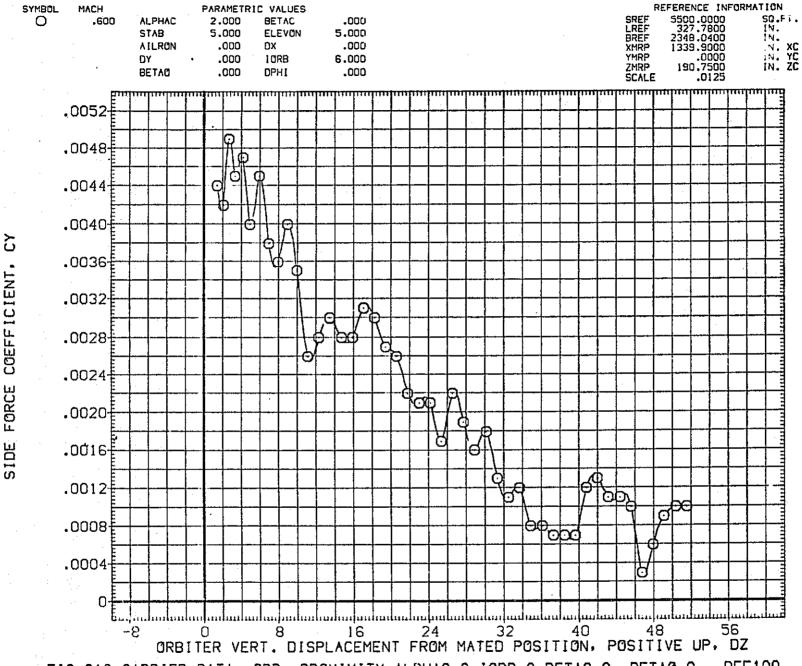


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE108)

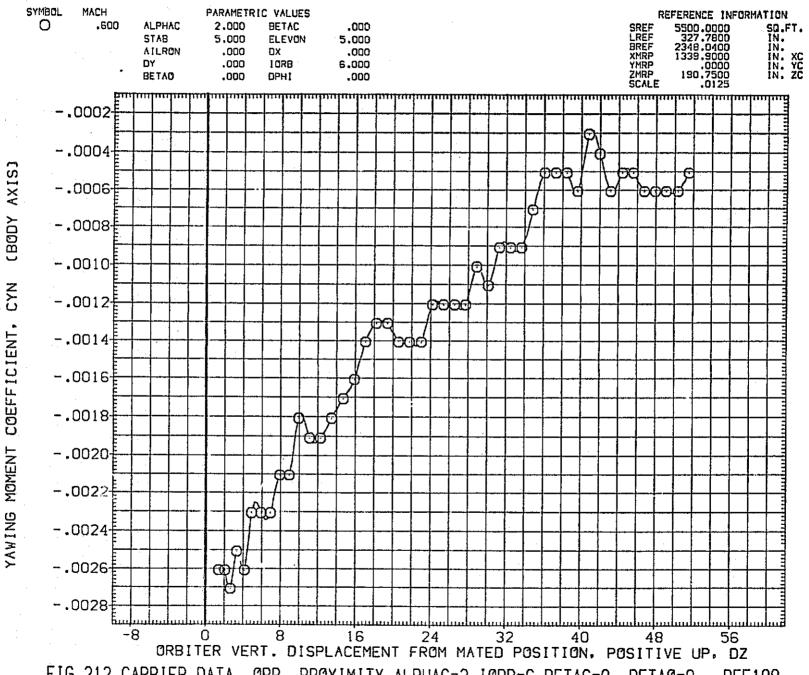


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

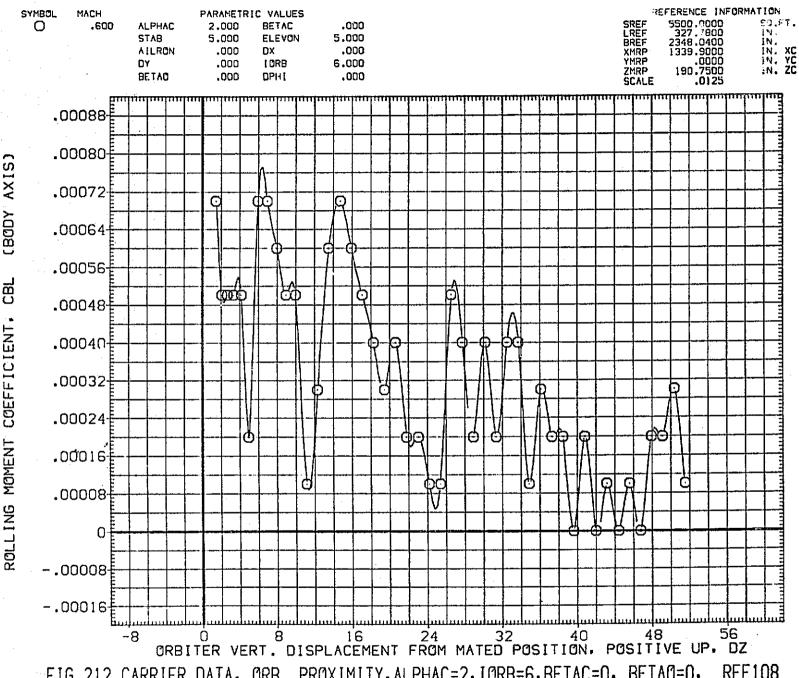


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108 PAGE 1670

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE108)

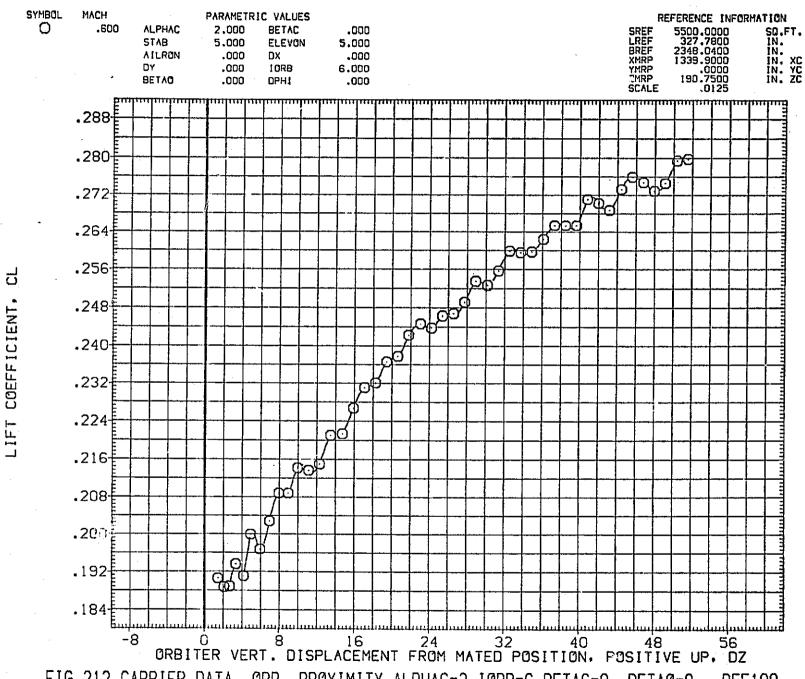


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

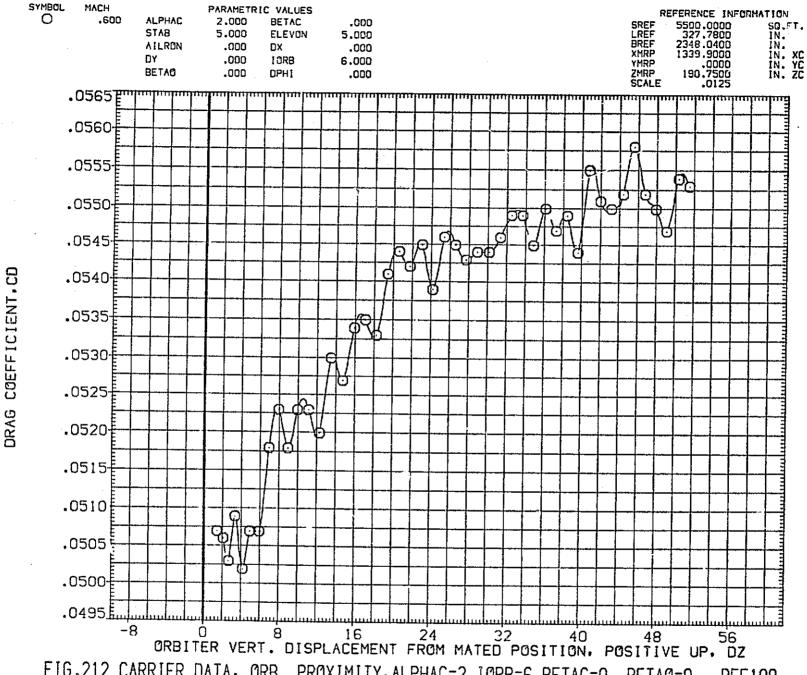


FIG.212 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE108

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE109)

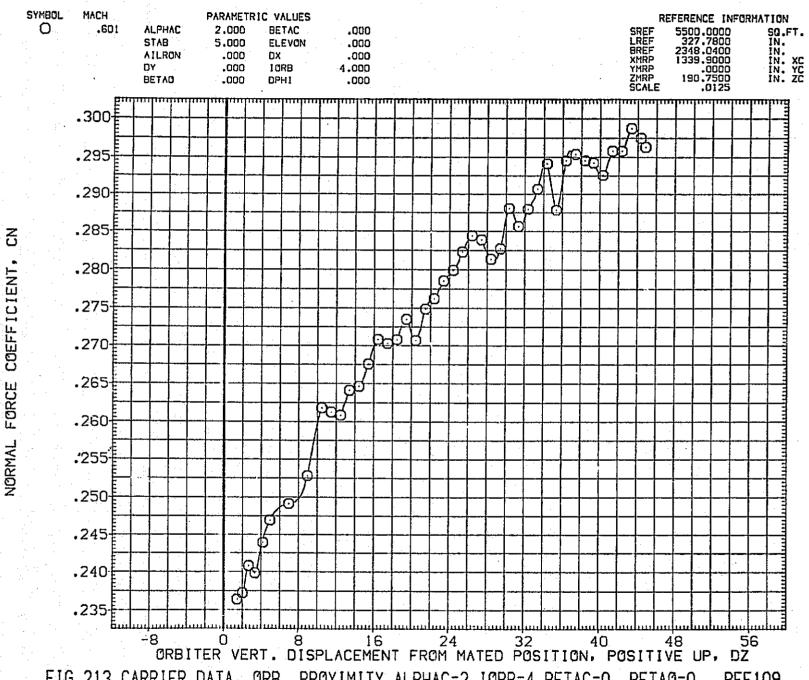


FIG.213 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE109

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE109)

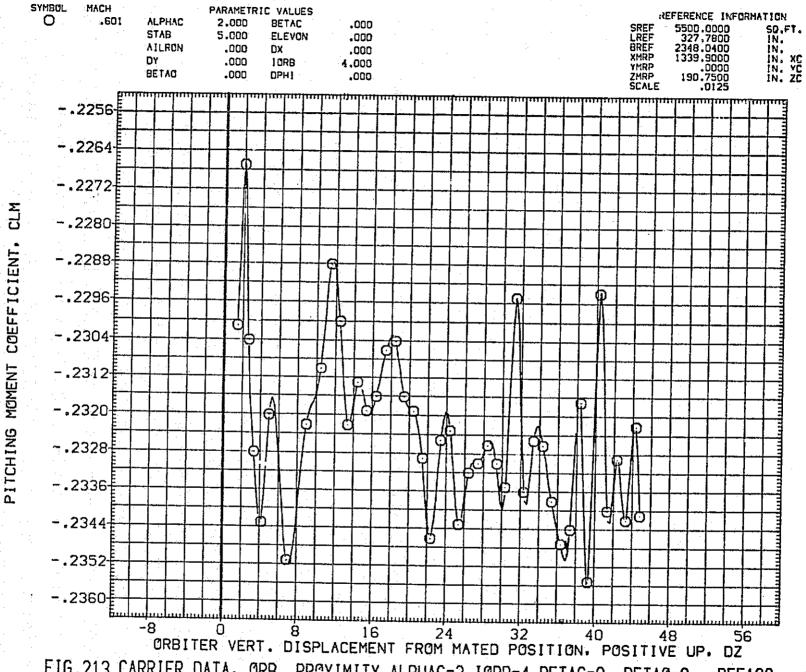
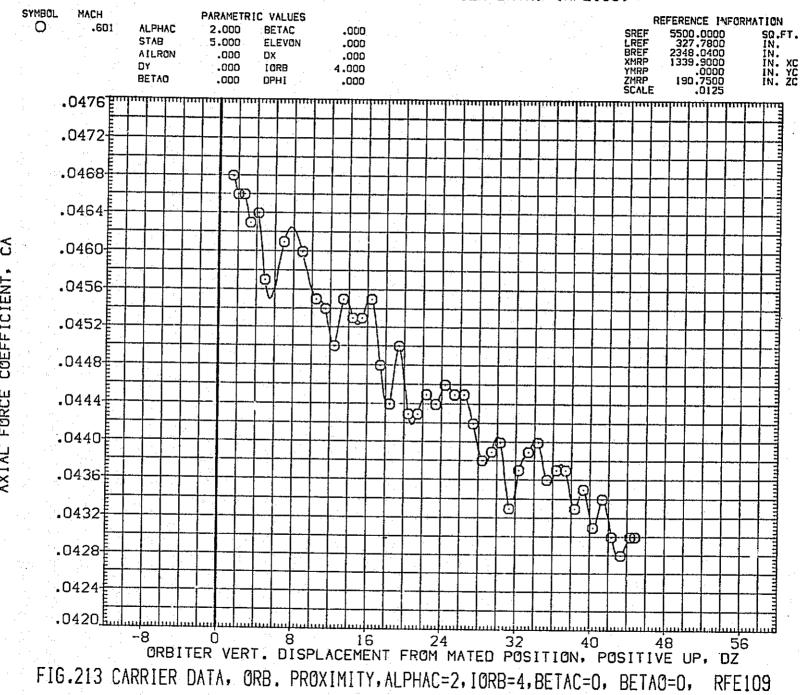


FIG.213 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE109

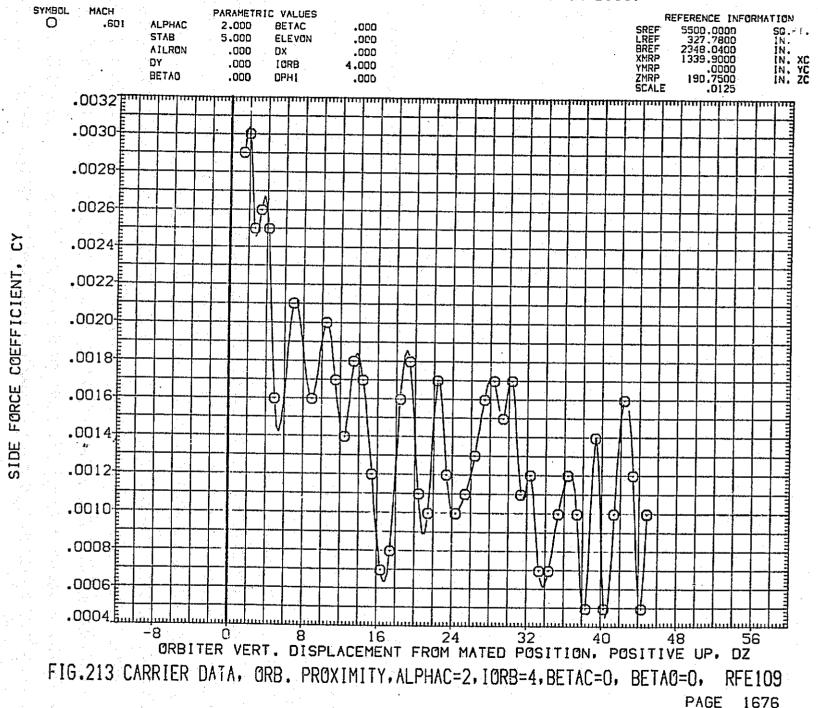
LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE109)



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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE109)



LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE109)

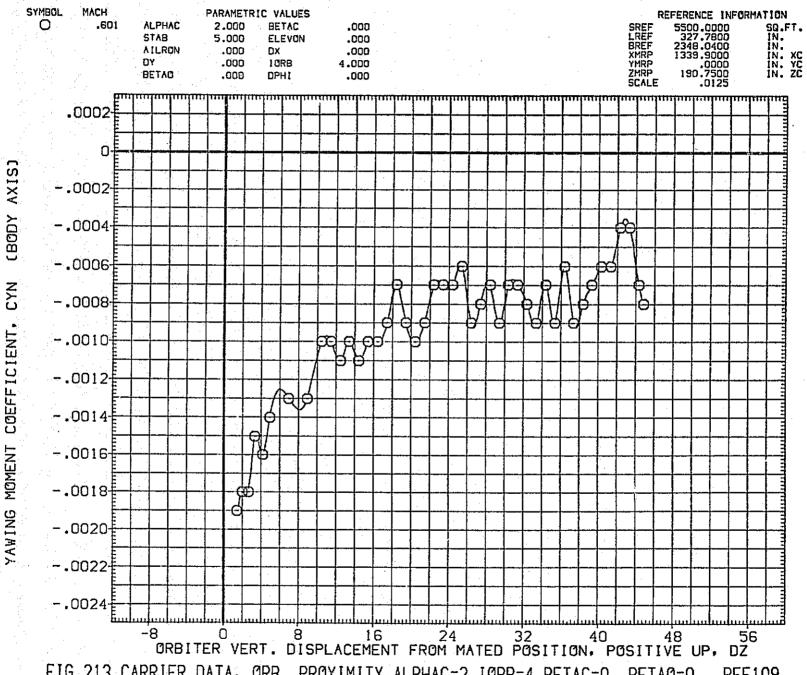
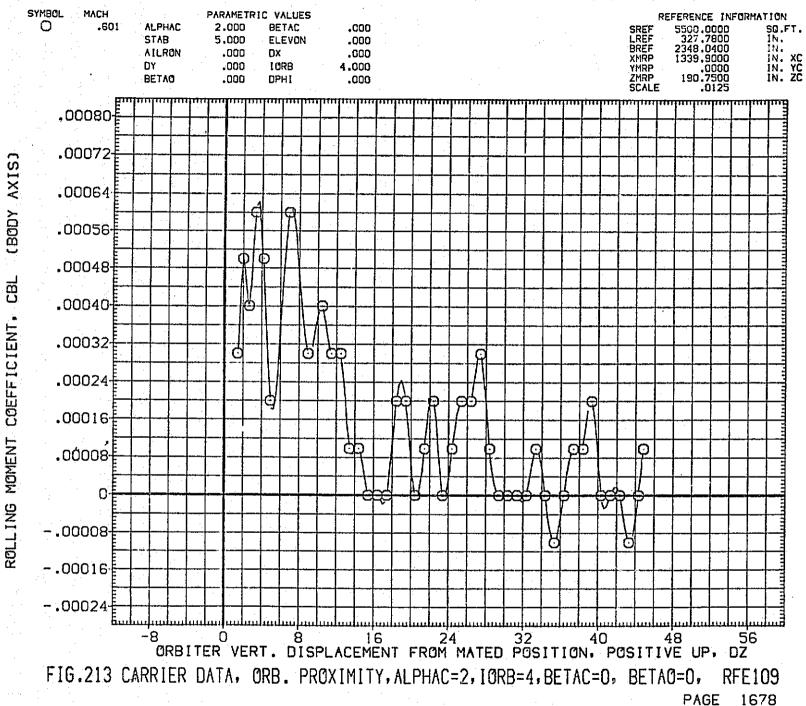


FIG.213 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE109

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE109)



LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE109)

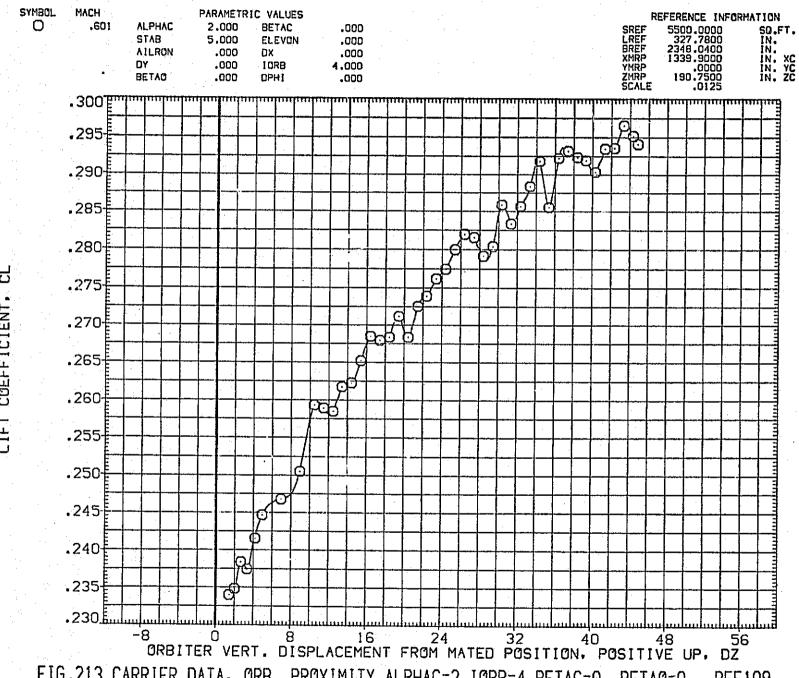


FIG.213 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE109

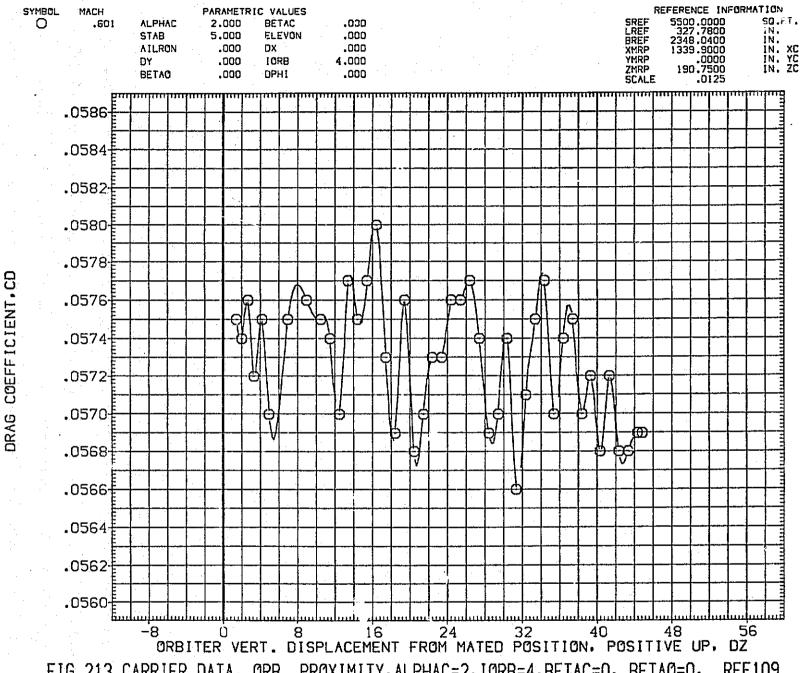


FIG.213 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=4, BETAC=0, BETAO=0, RFE109

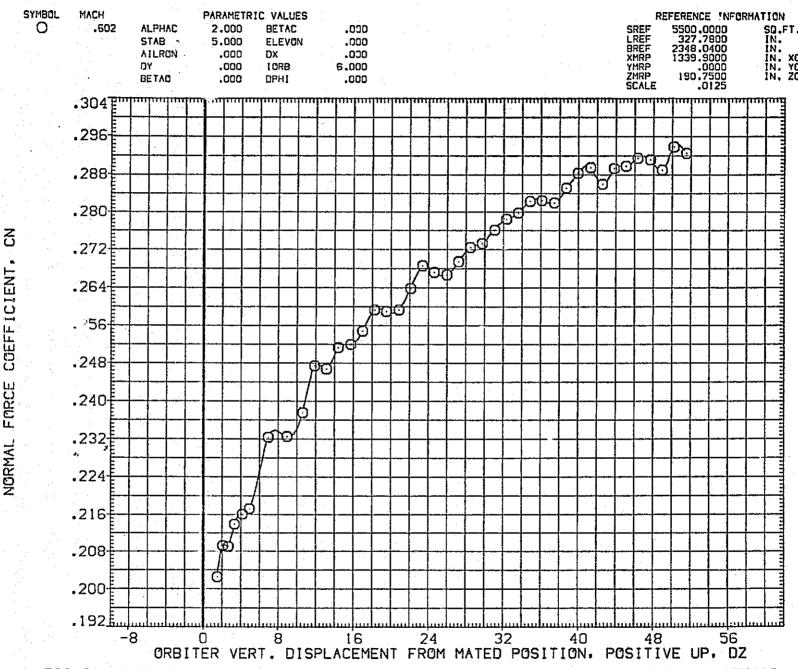


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110

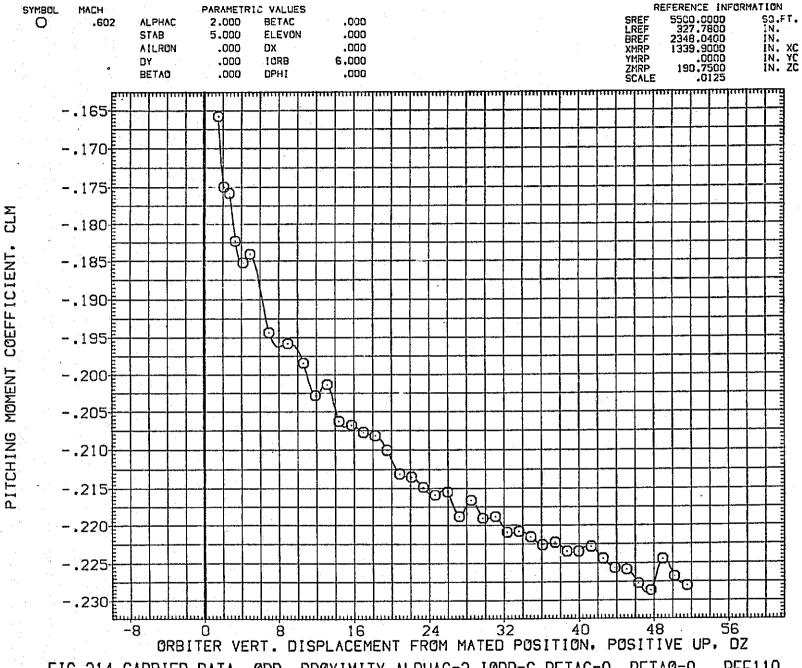


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE110)

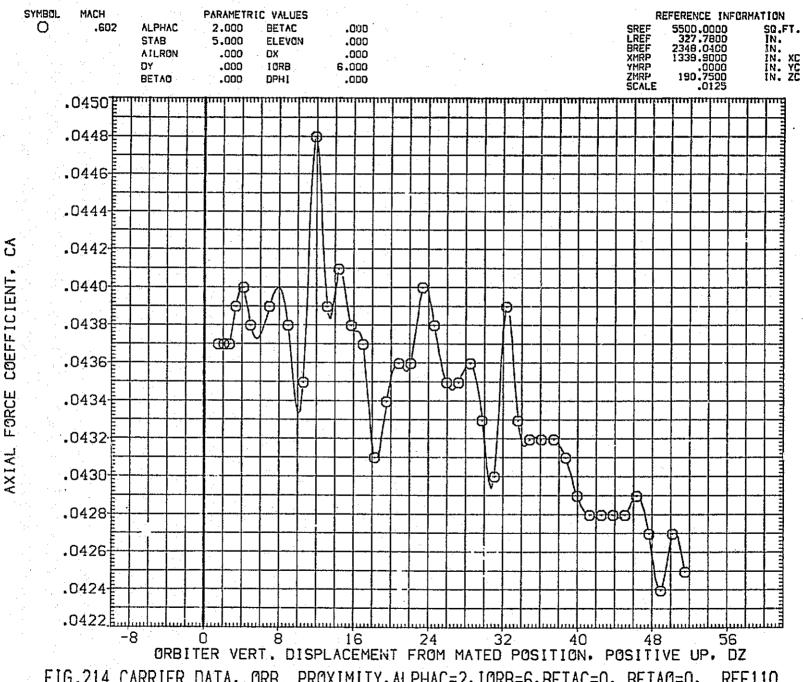


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE110)

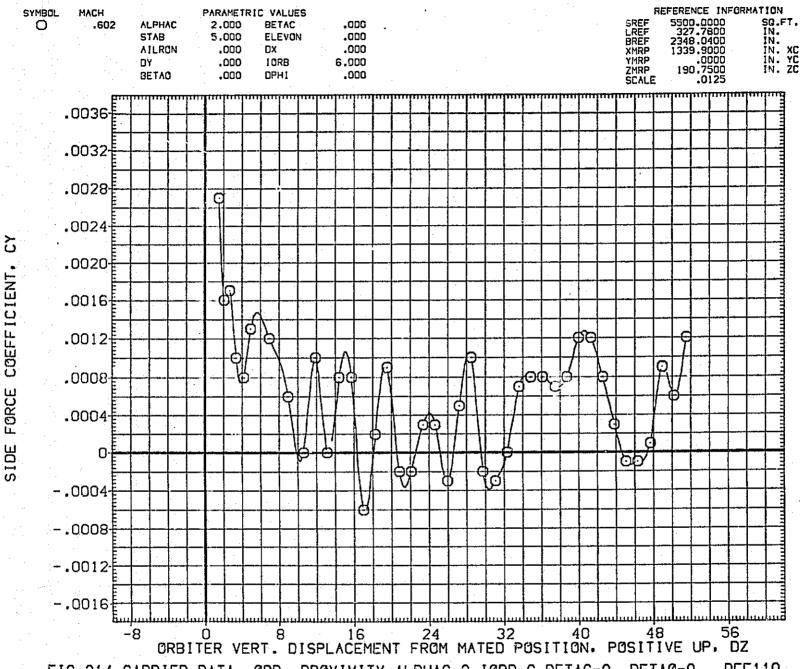
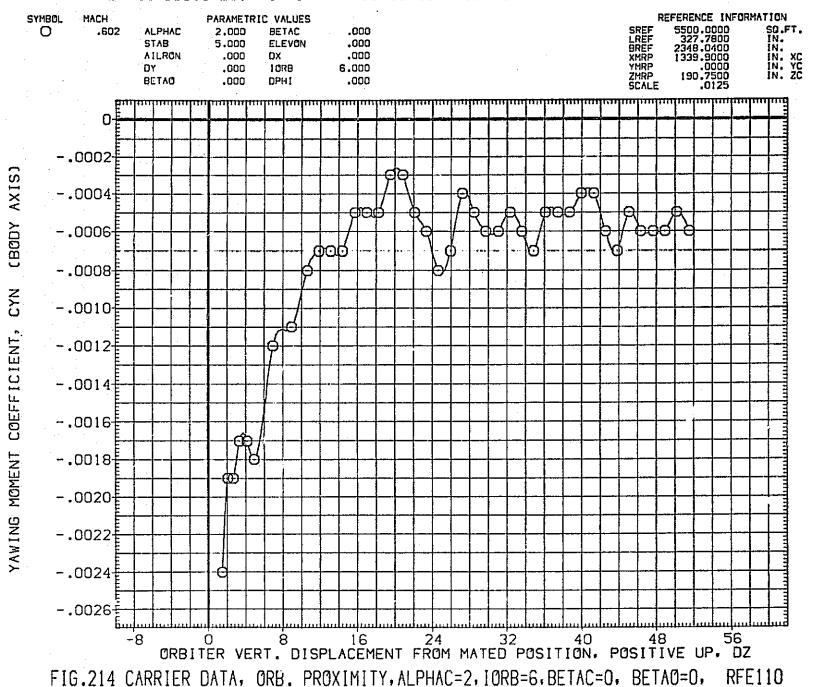


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE110)



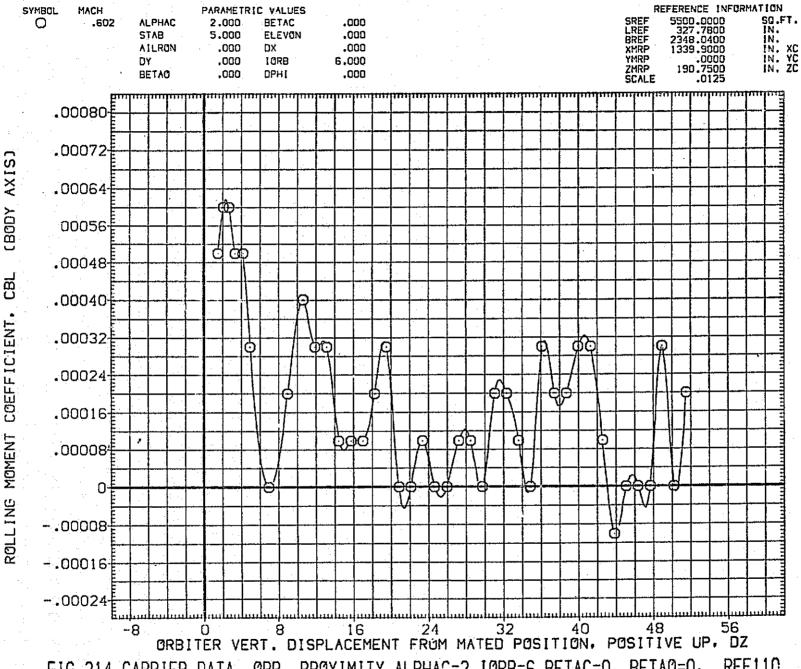


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE110)

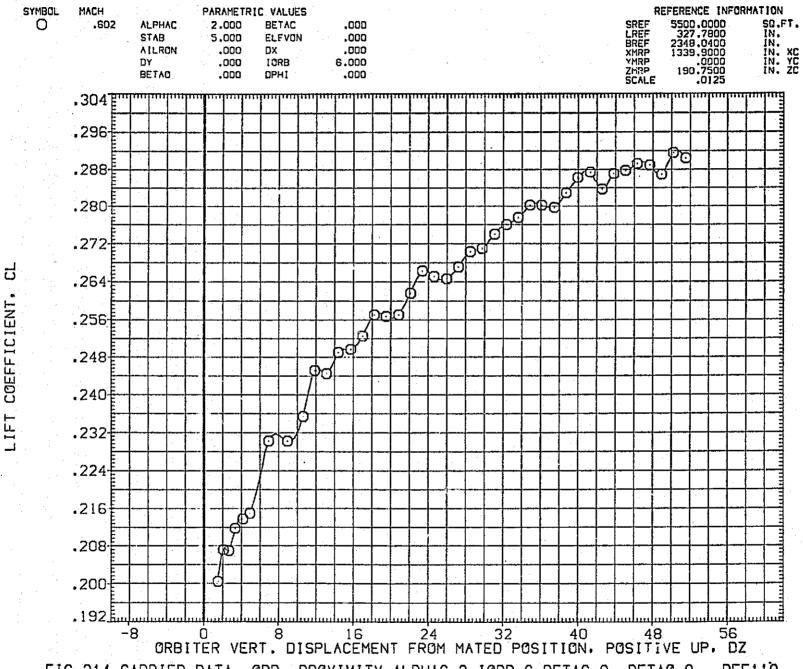


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110

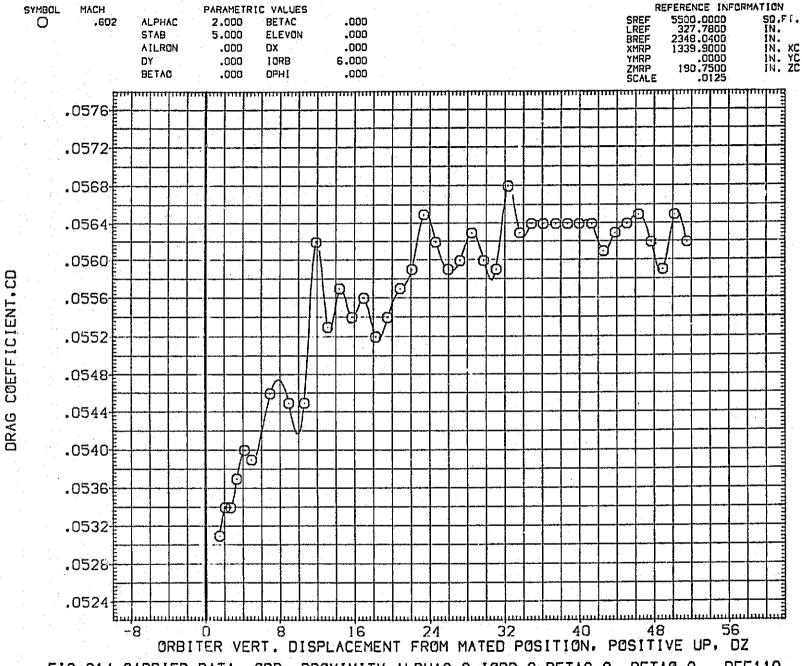


FIG.214 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE110

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE111)

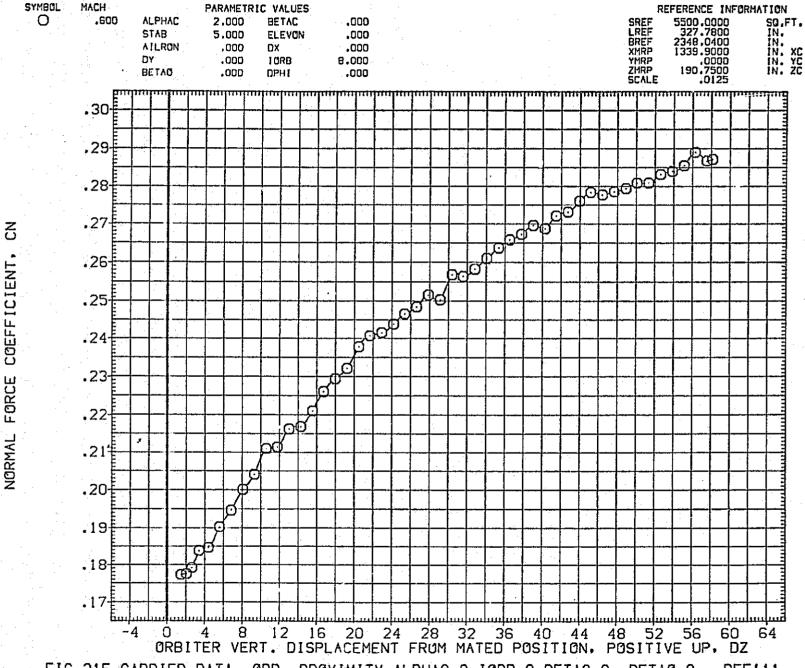


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

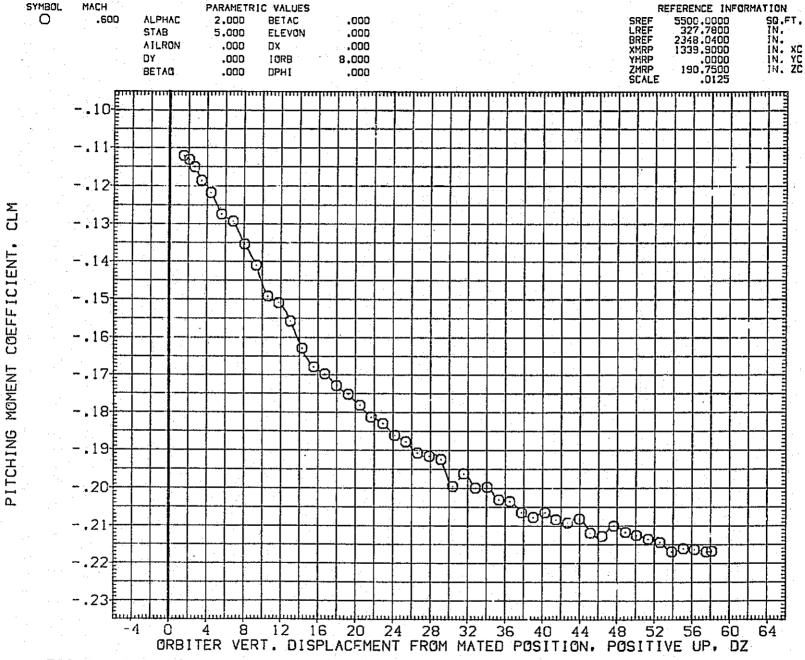


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

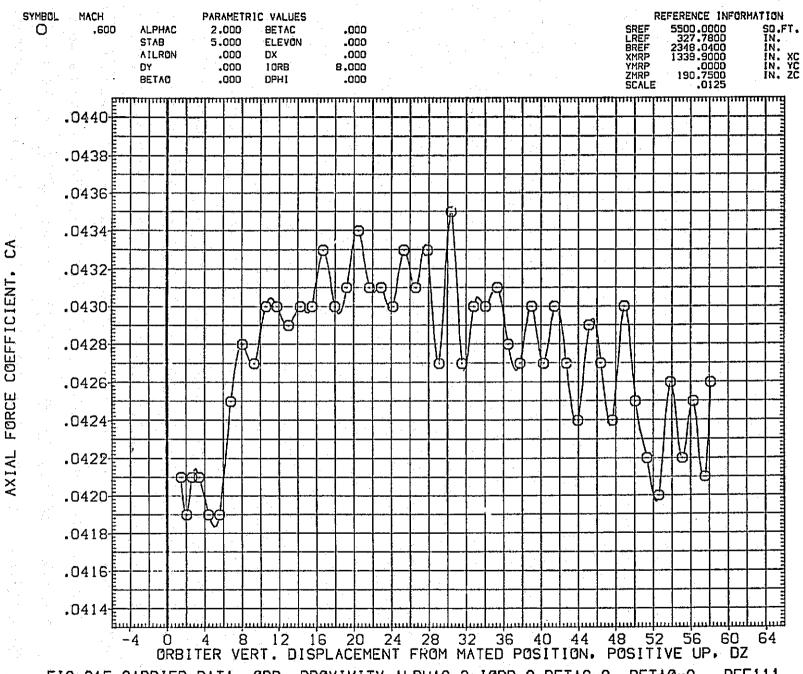


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

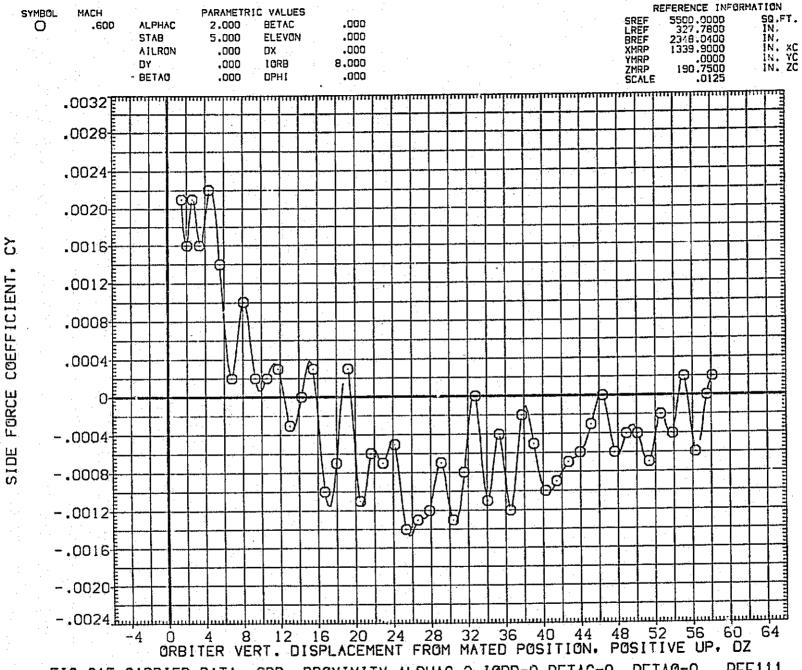


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

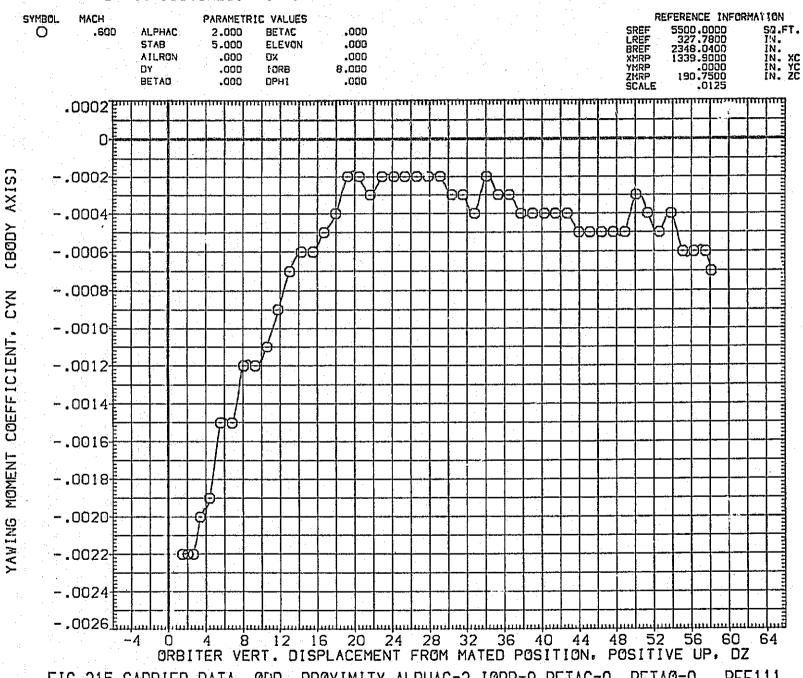


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

## LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE111)

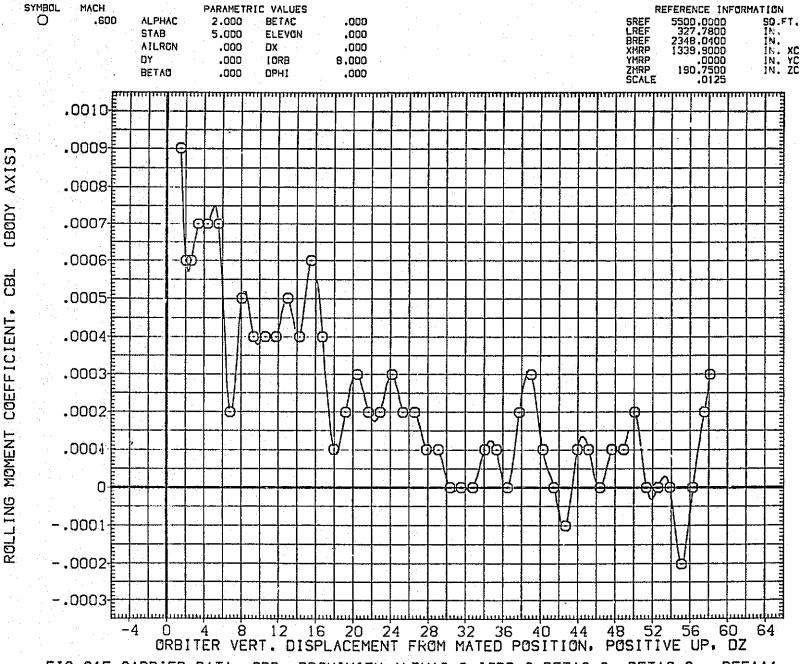


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

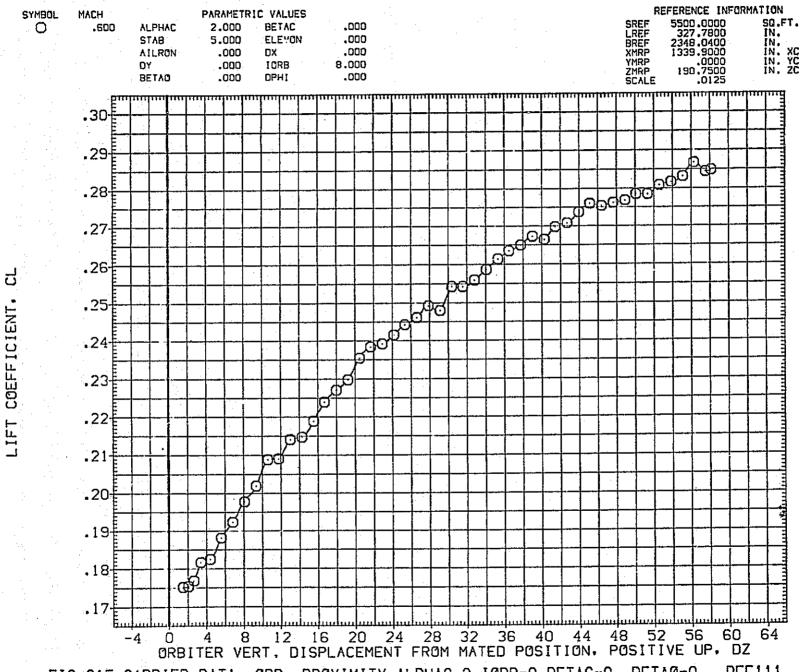


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

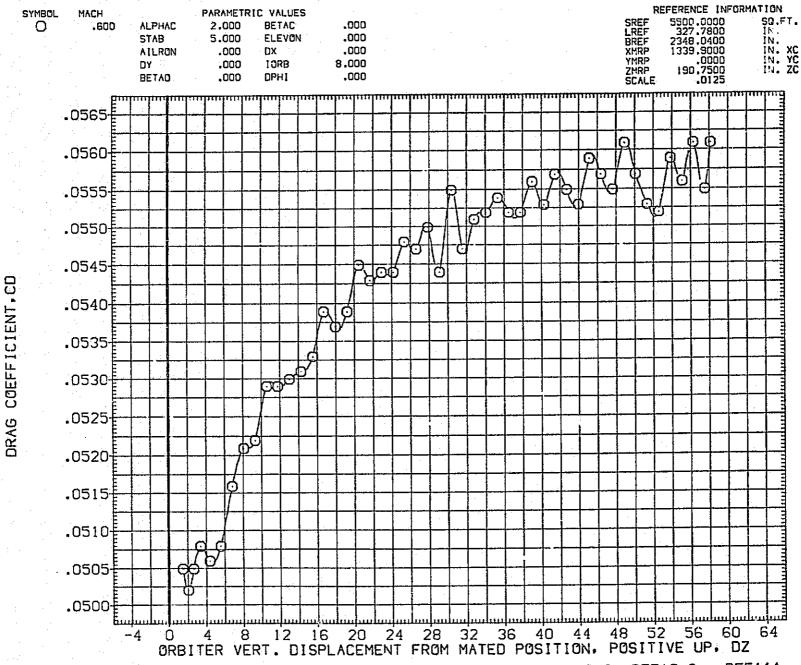
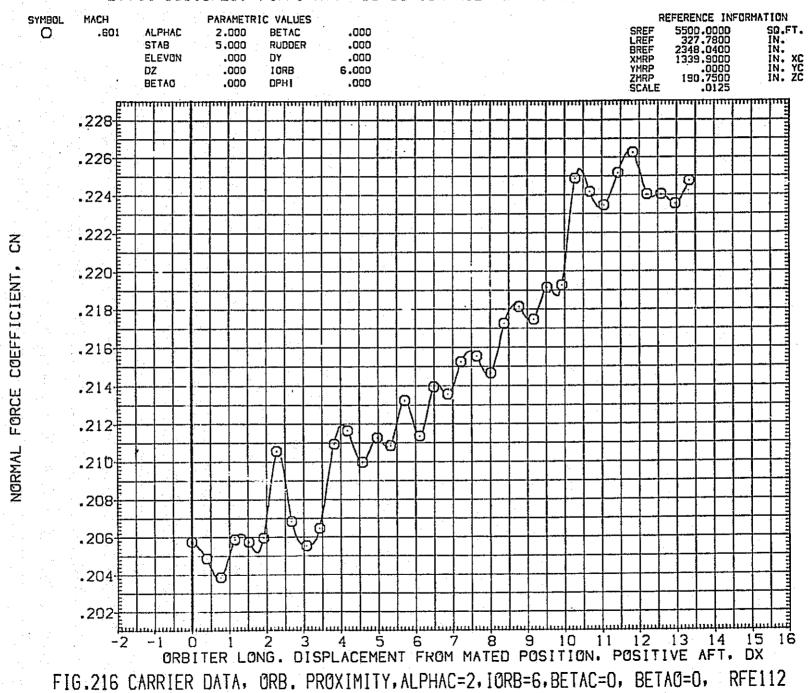


FIG.215 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=8, BETAC=0, BETAO=0, RFE111

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE112)



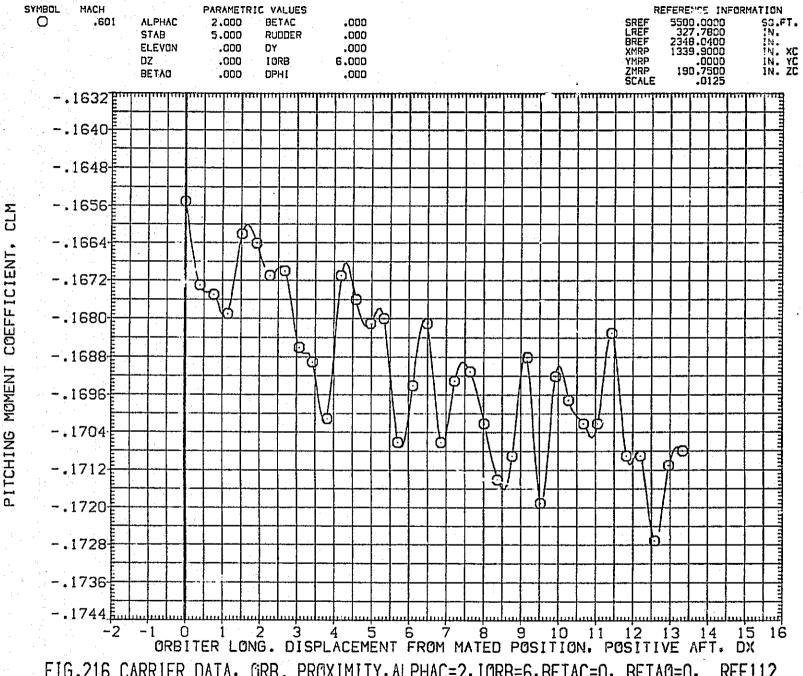
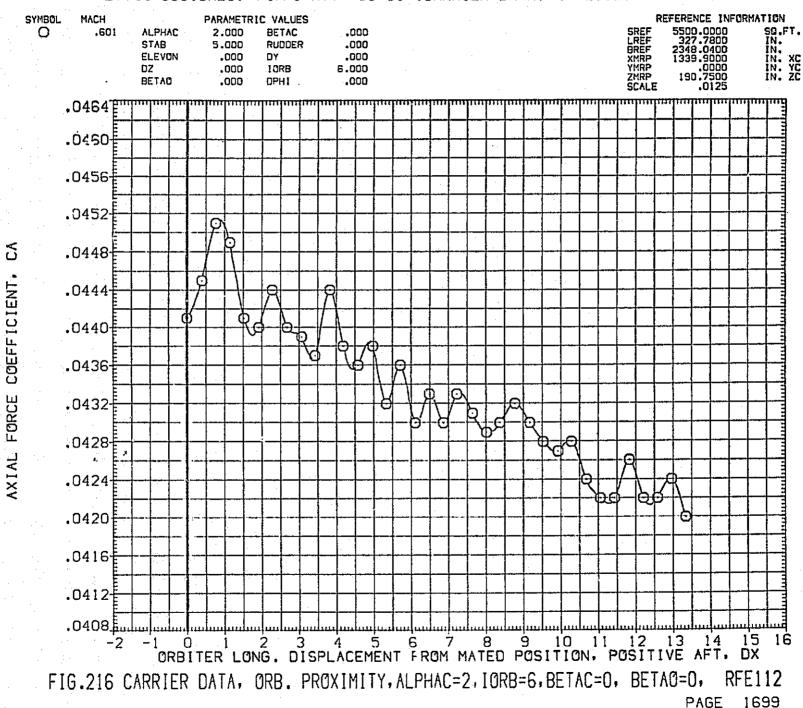


FIG.216 CARRIER DATA, GRB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE112

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE112)



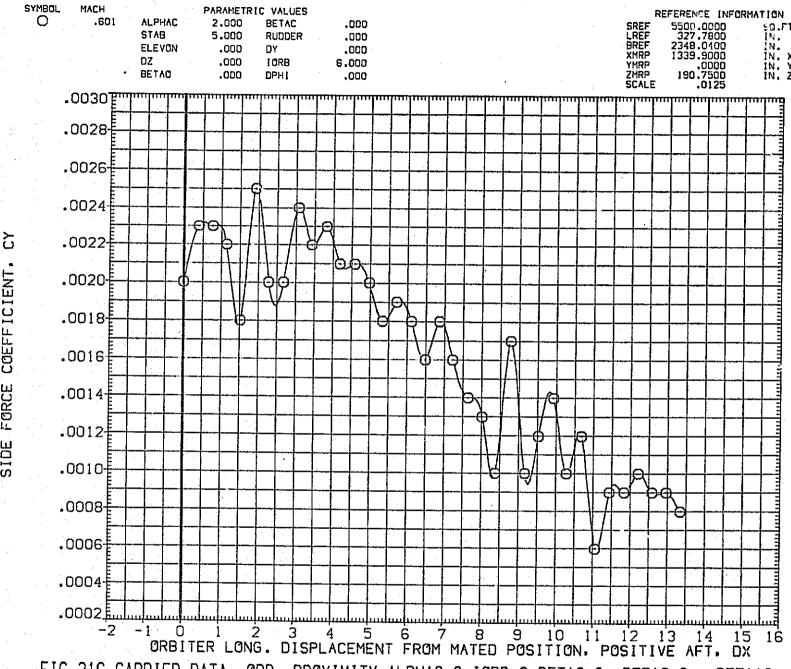
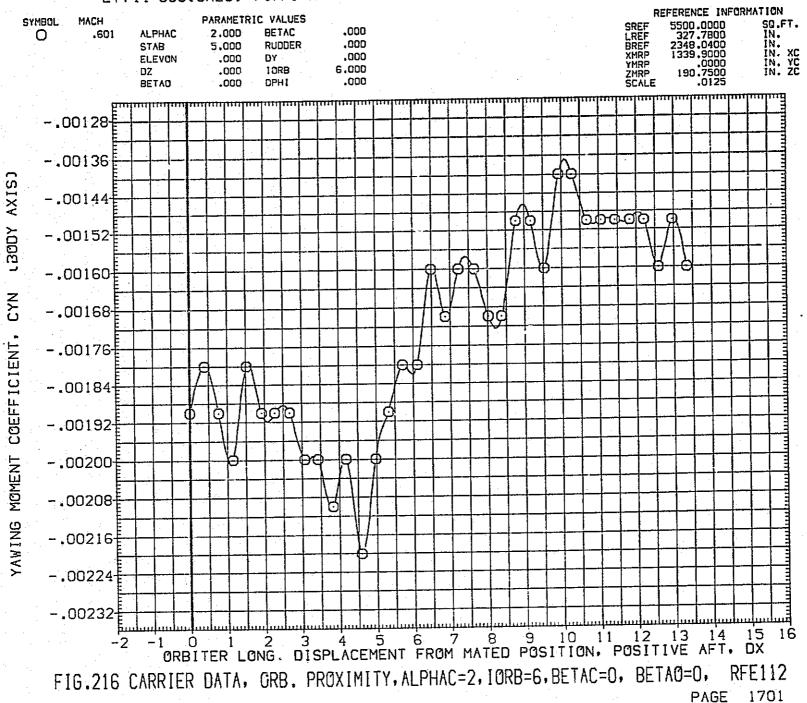
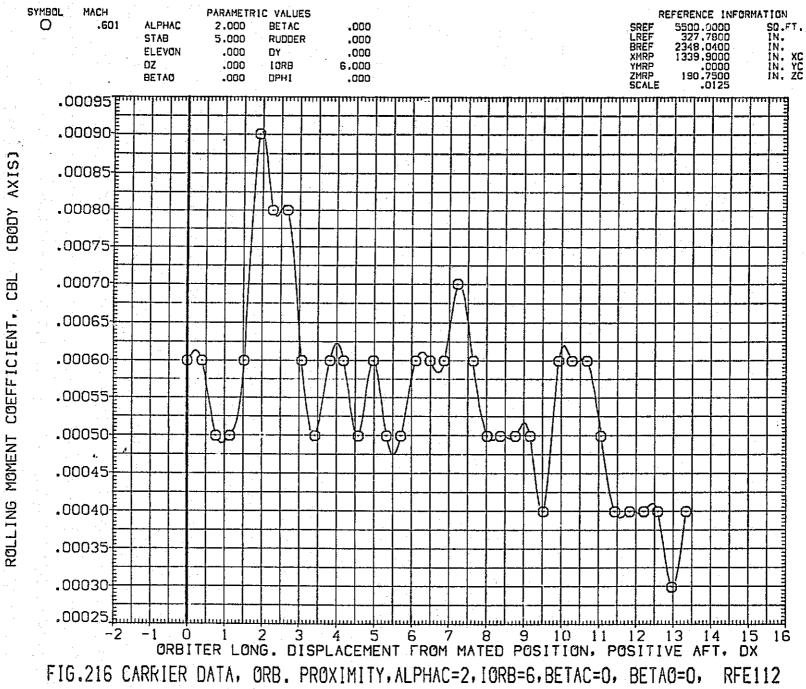


FIG.216 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE112

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE112)





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LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE112)

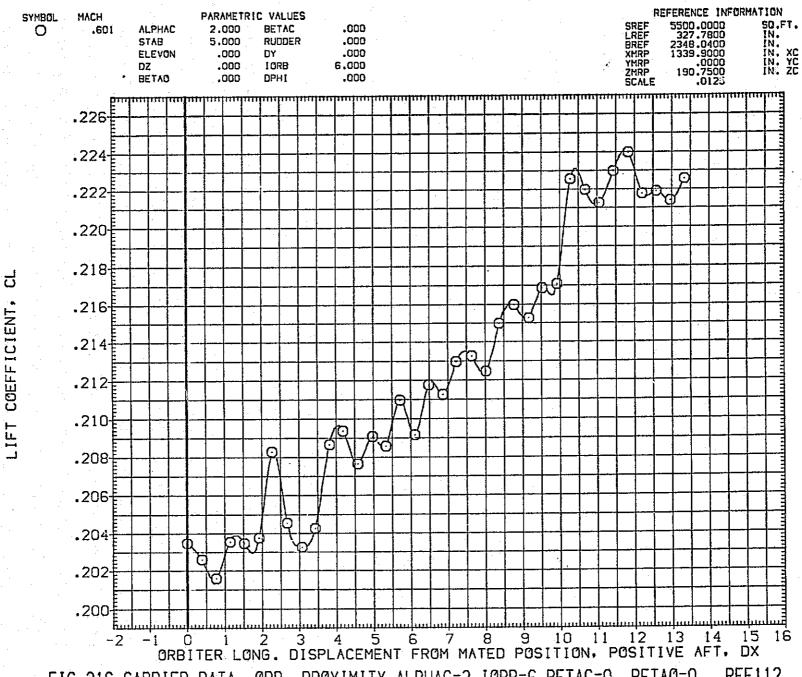


FIG.216 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE112

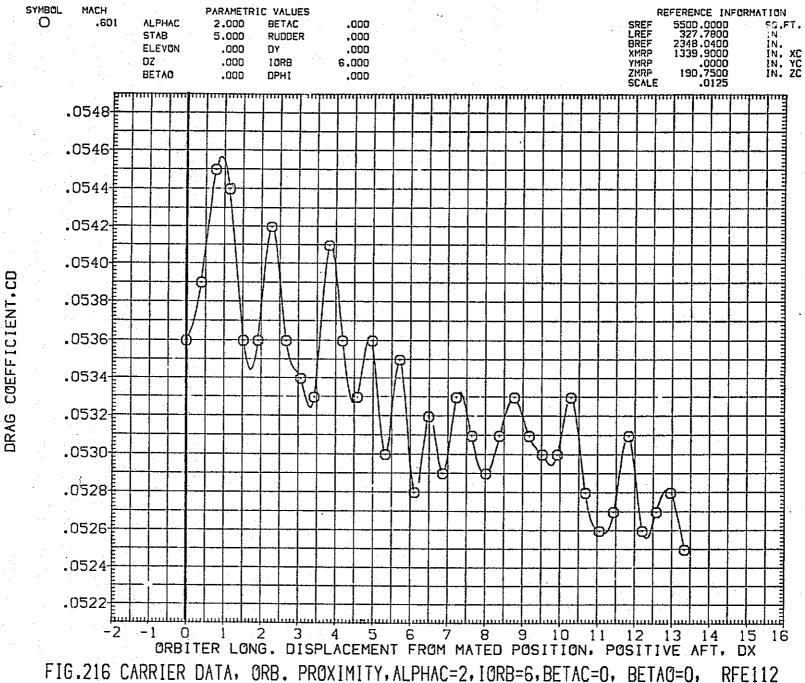


FIG.216 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, PAGE 1704

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)

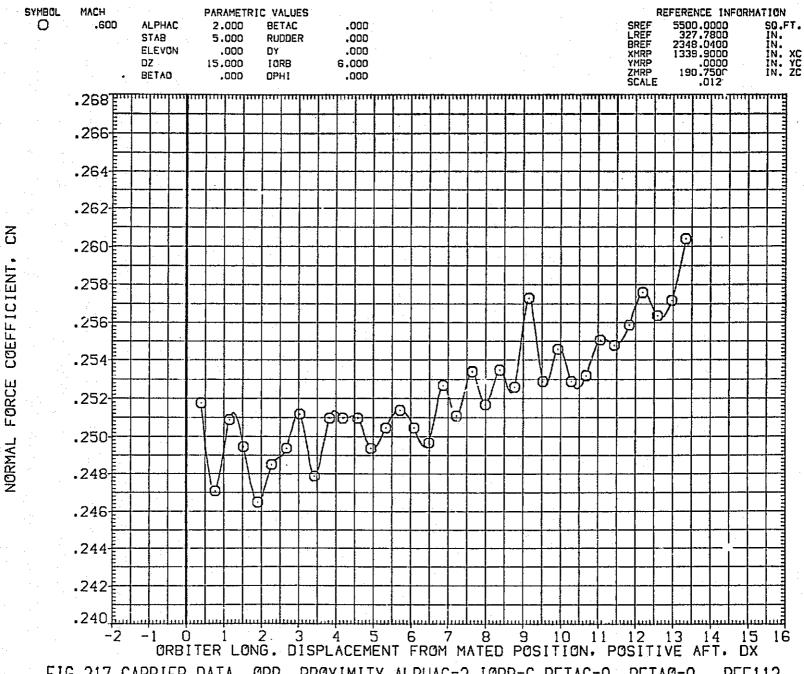
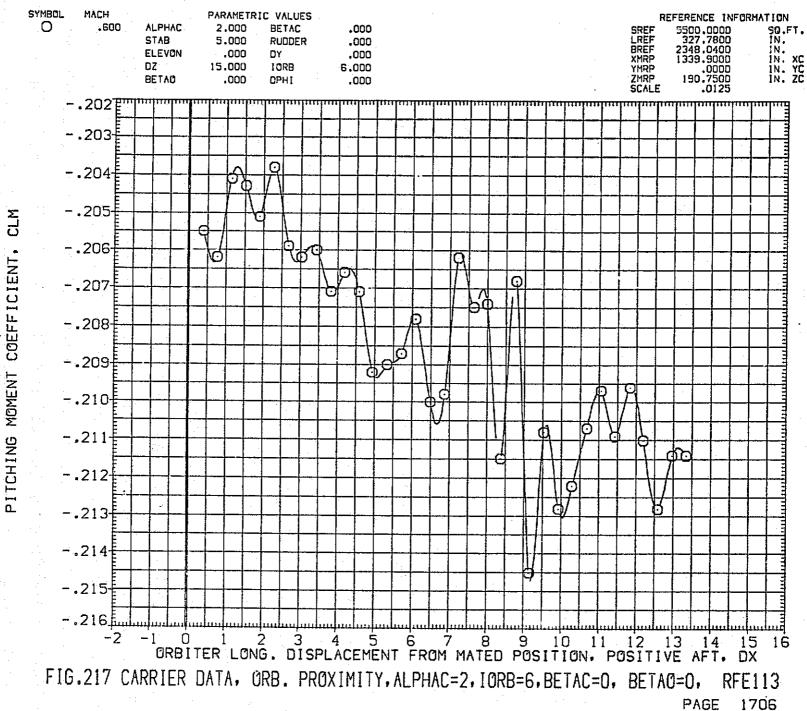


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE113

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)



LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)

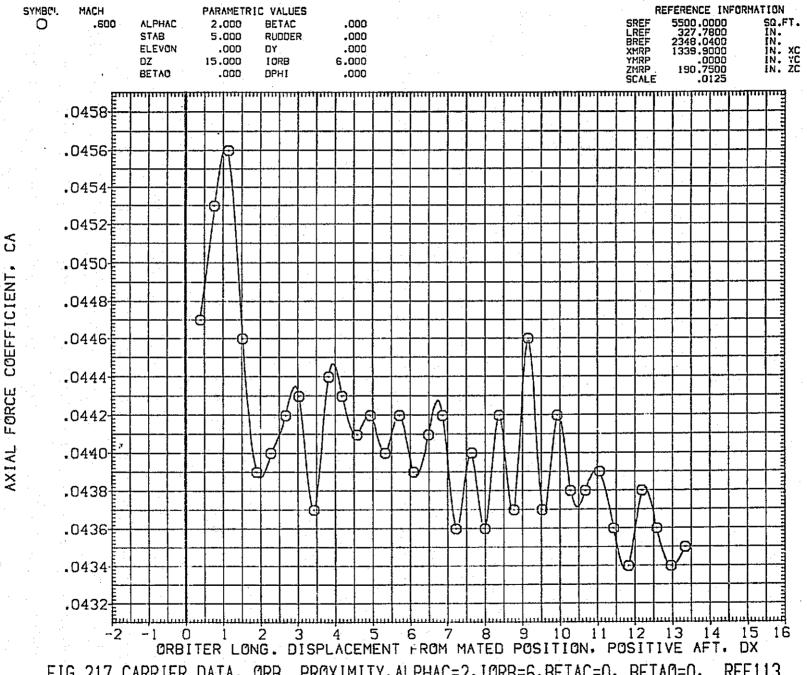


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE113

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)

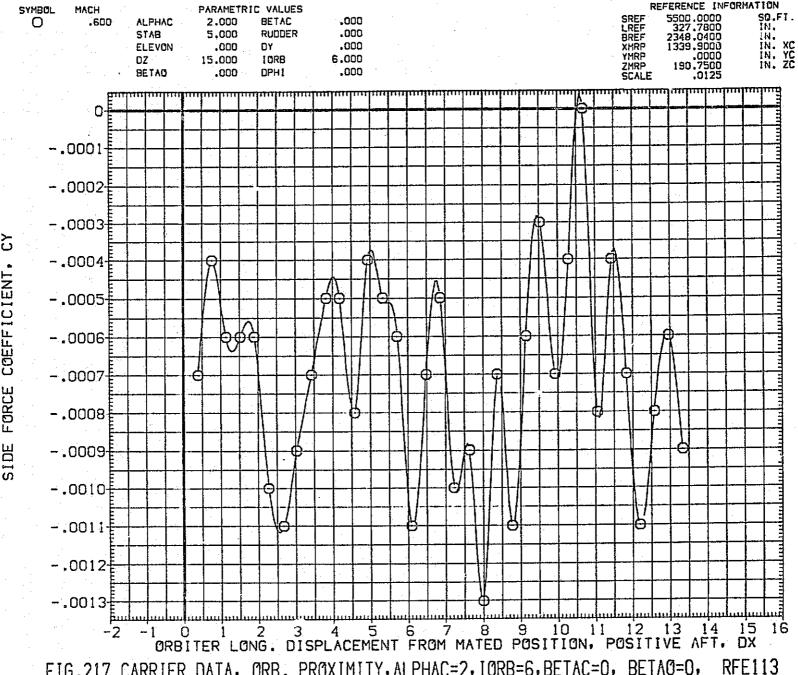
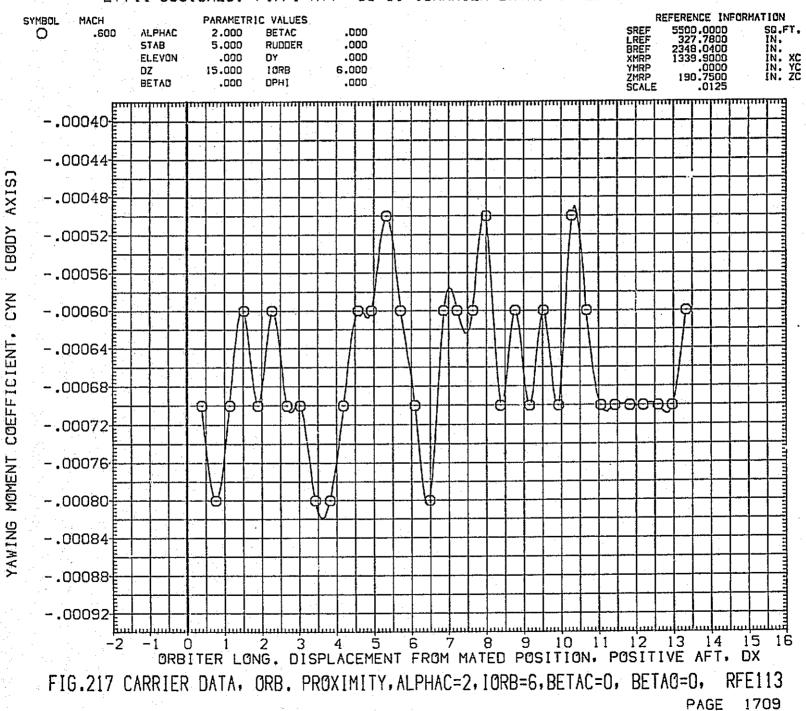


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE113

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)



LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE113)

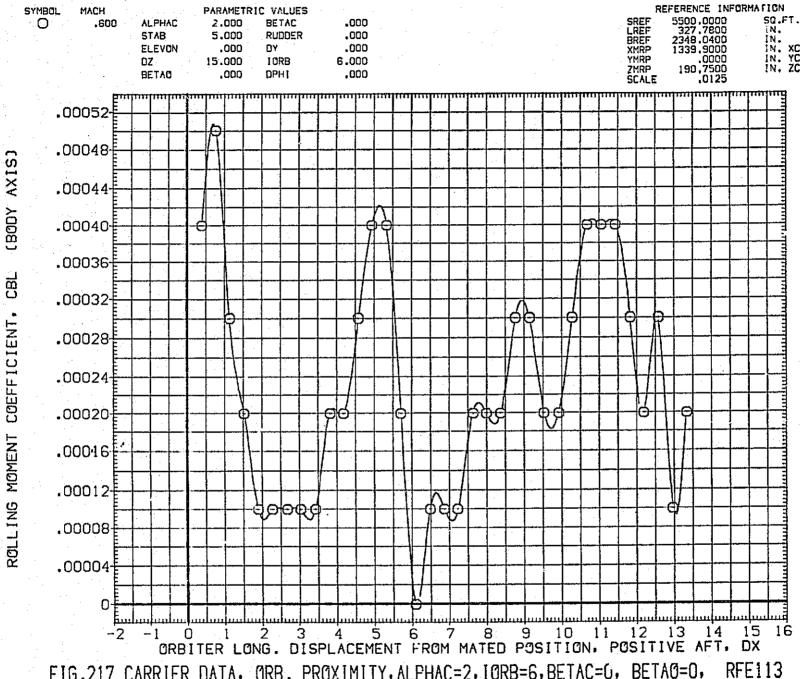


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=G, BETAO=0, PAGE 1710

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE113)

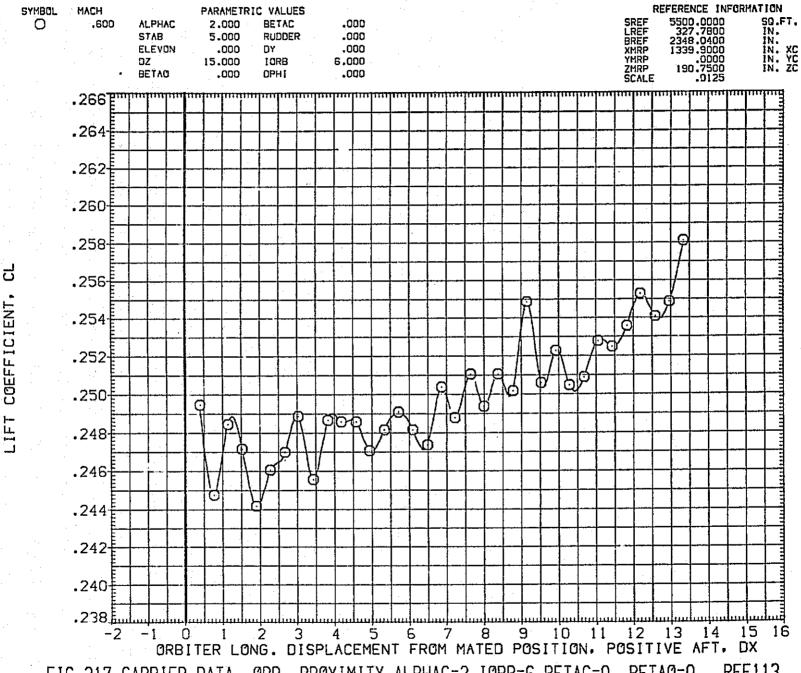


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE113

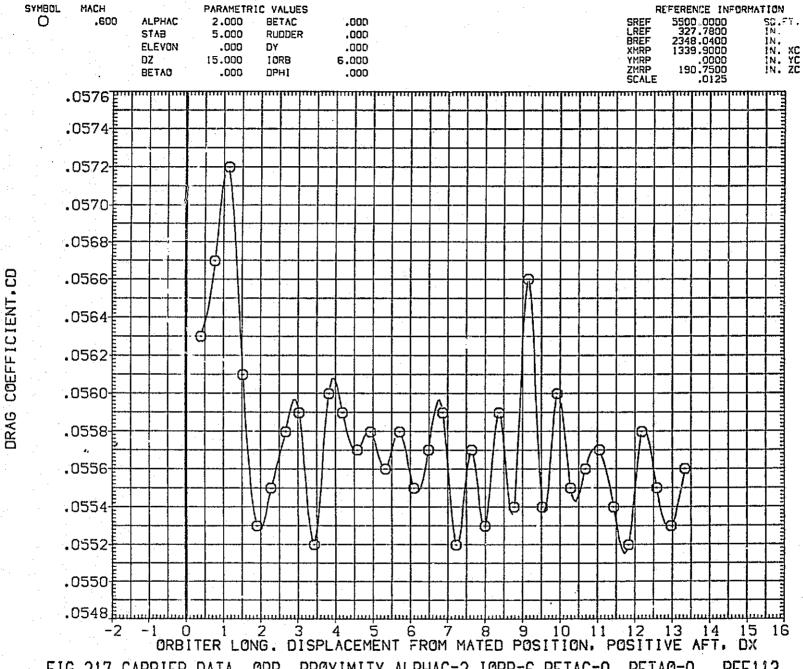


FIG.217 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE113

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE114)

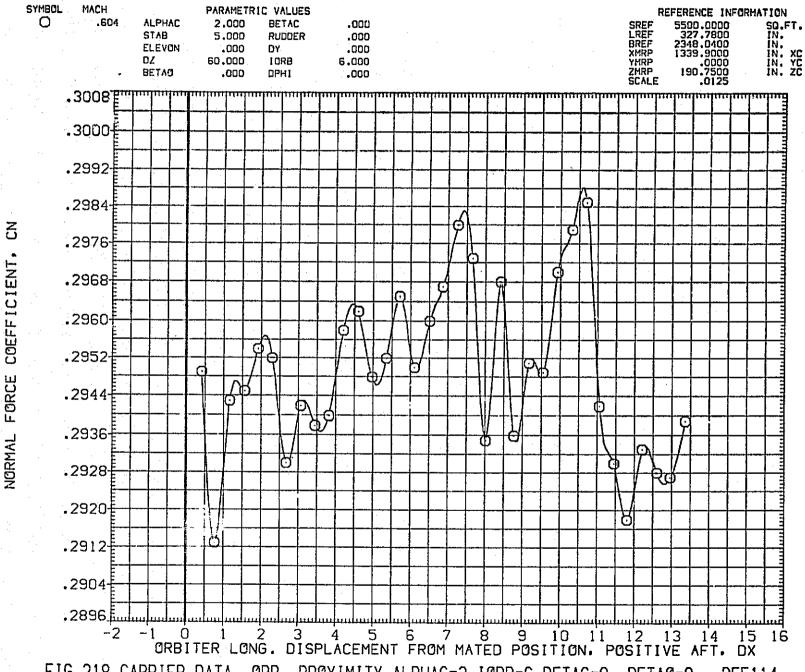
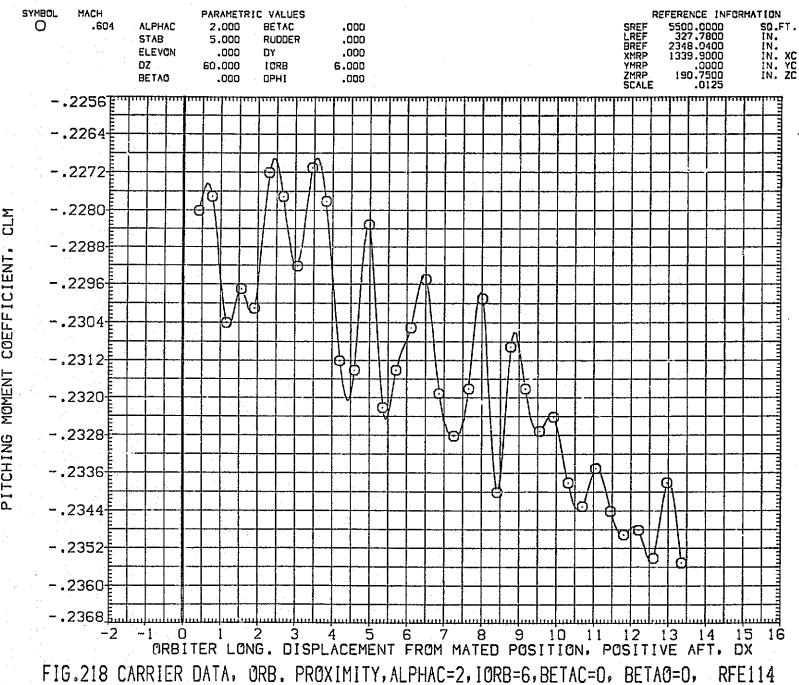
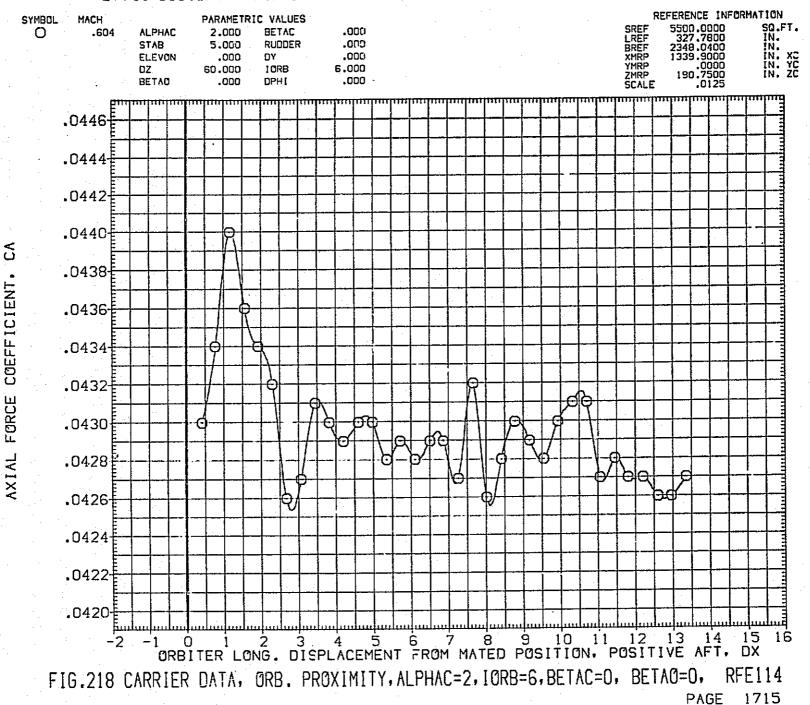


FIG.218 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE114



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LTV44-559(CA29) 747/1 ATY 06 S1 (CARRIER DATA) (RFE114)



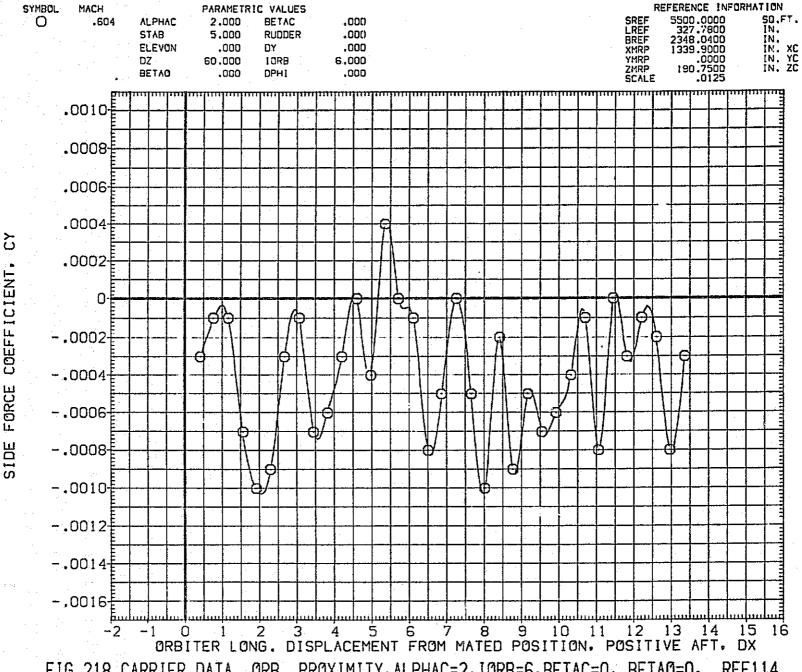


FIG.218 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE114

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE114)

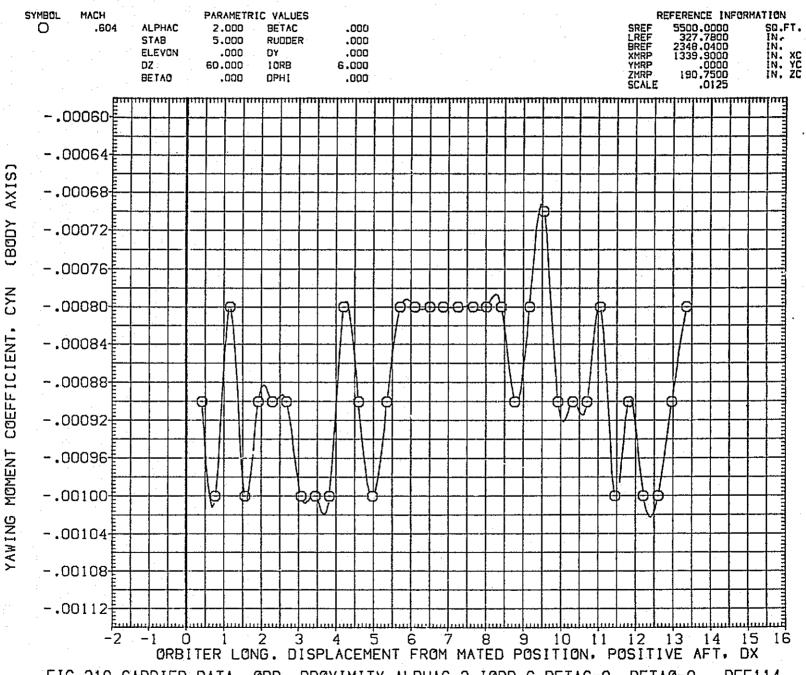
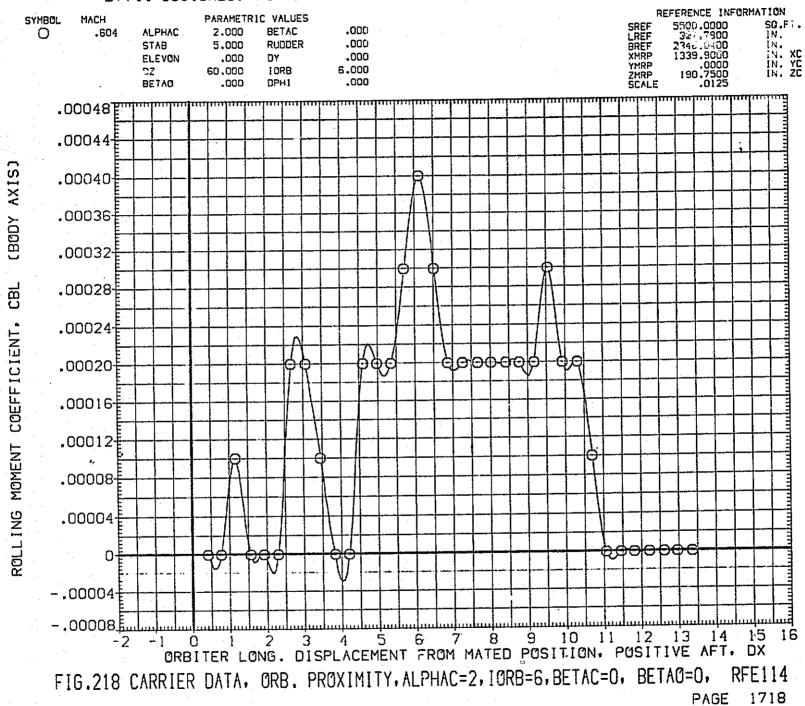


FIG.218 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE114



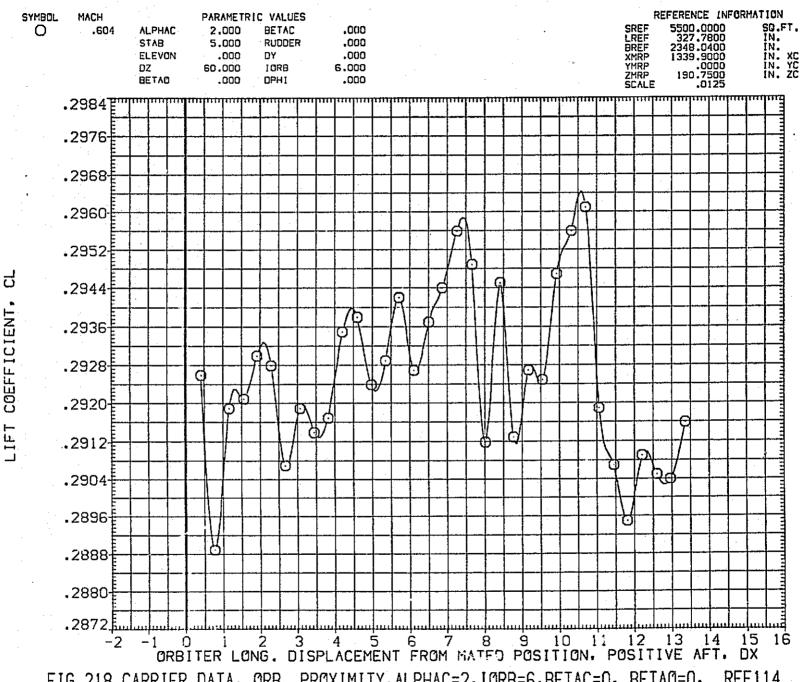


FIG.218 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE114

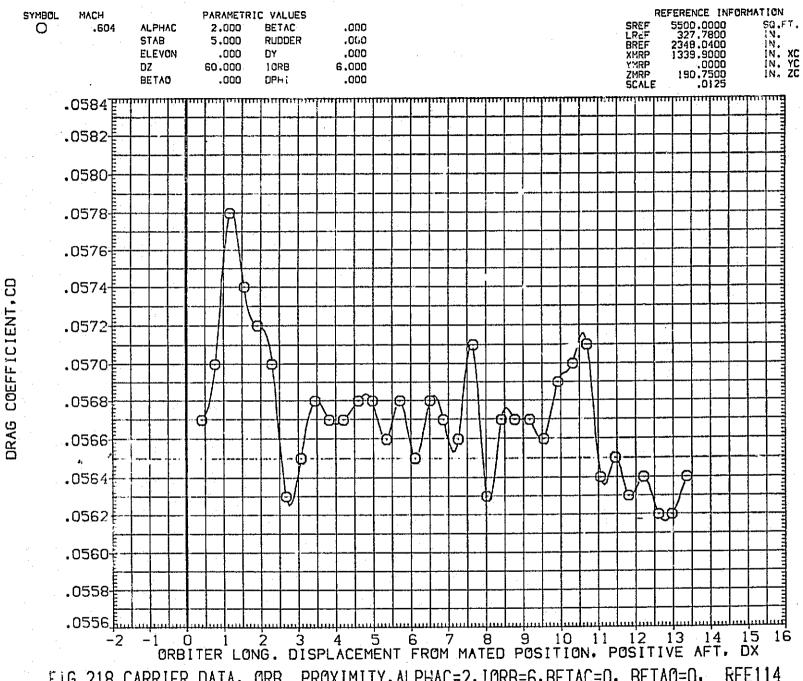


FIG.218 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE114
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LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE115)

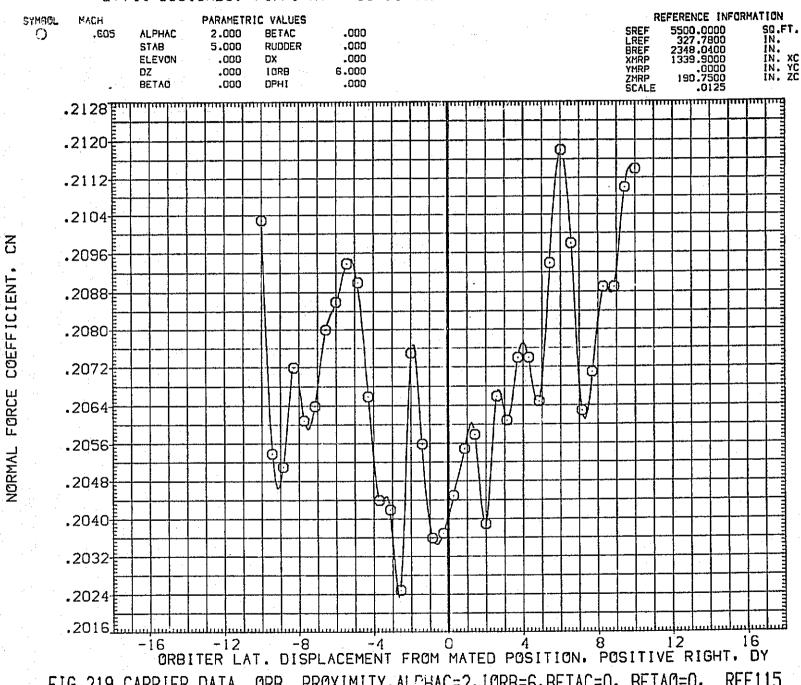


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALCHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115 PAGE 1721

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE115)

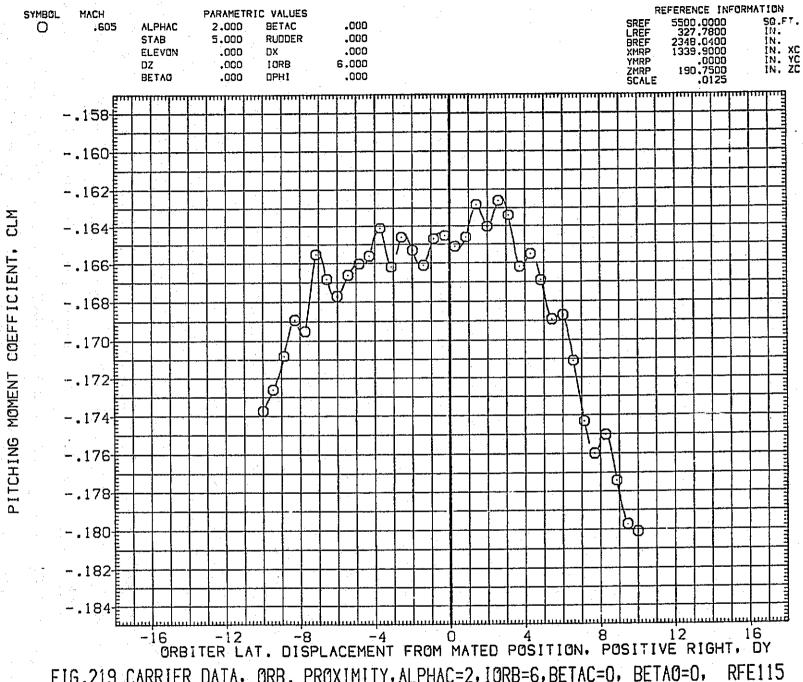
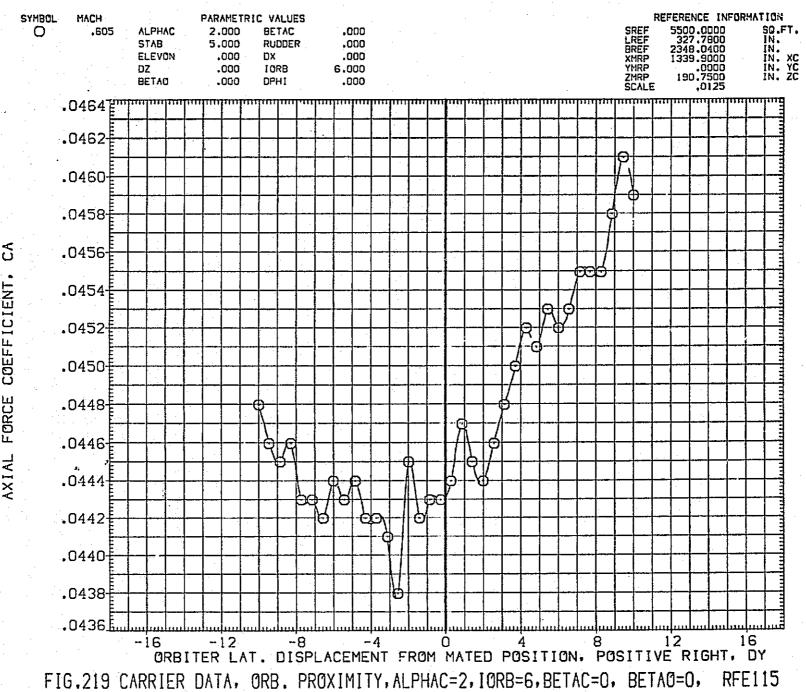


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, PAGE 1722

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE115)



LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE115)

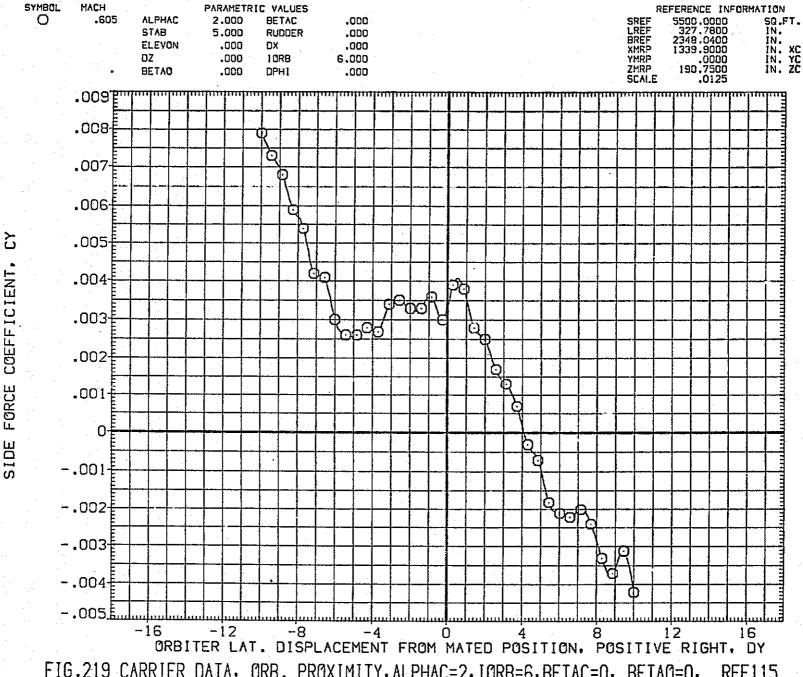


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115 PAGE 1724

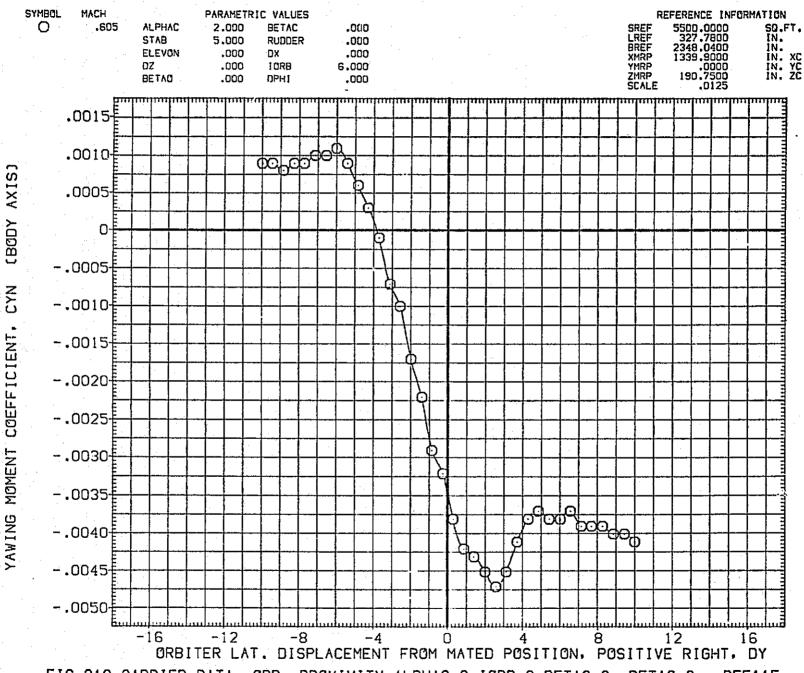


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115

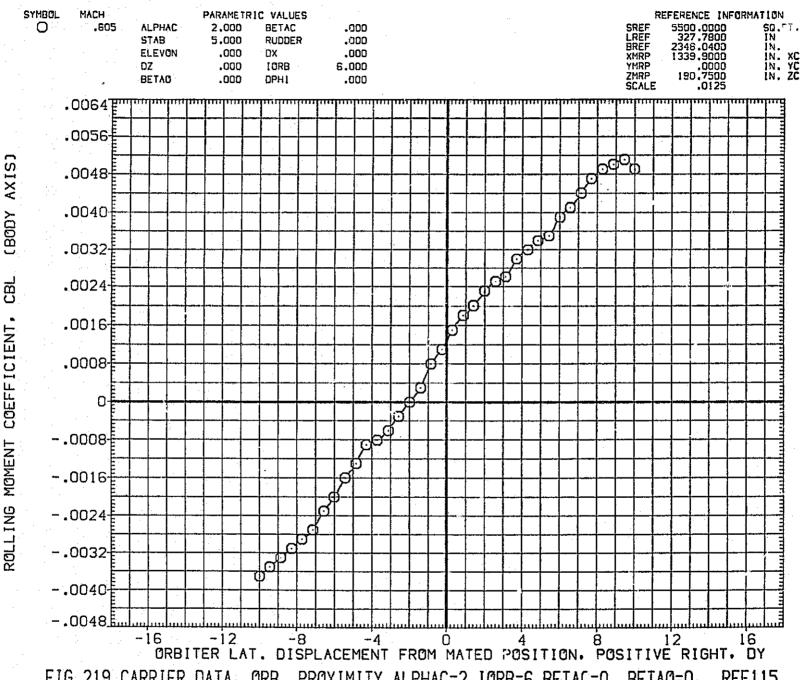


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE115)

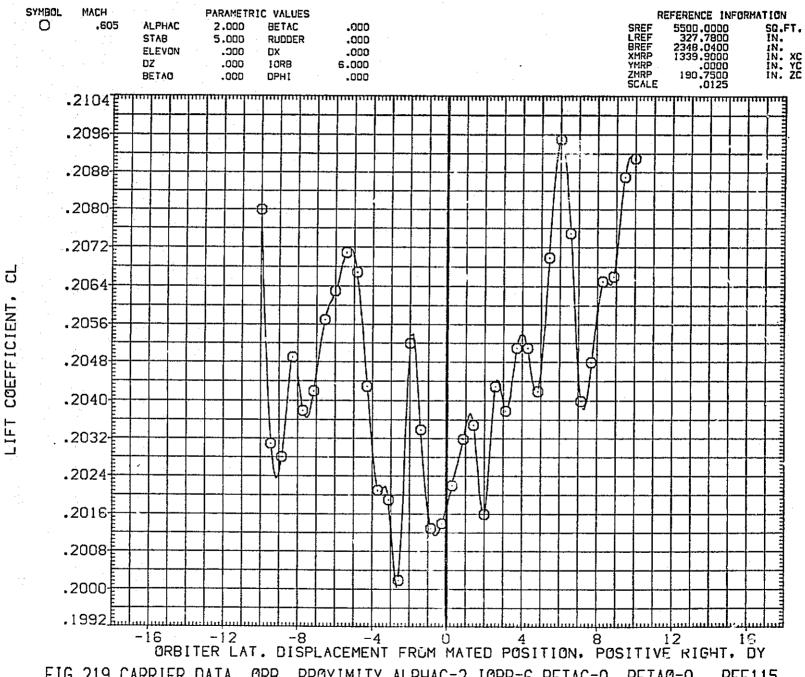


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115

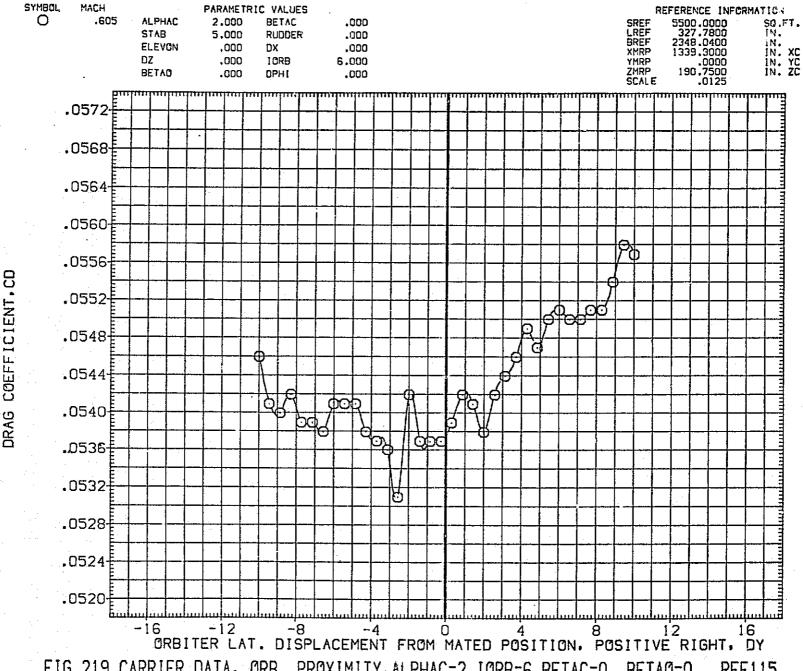
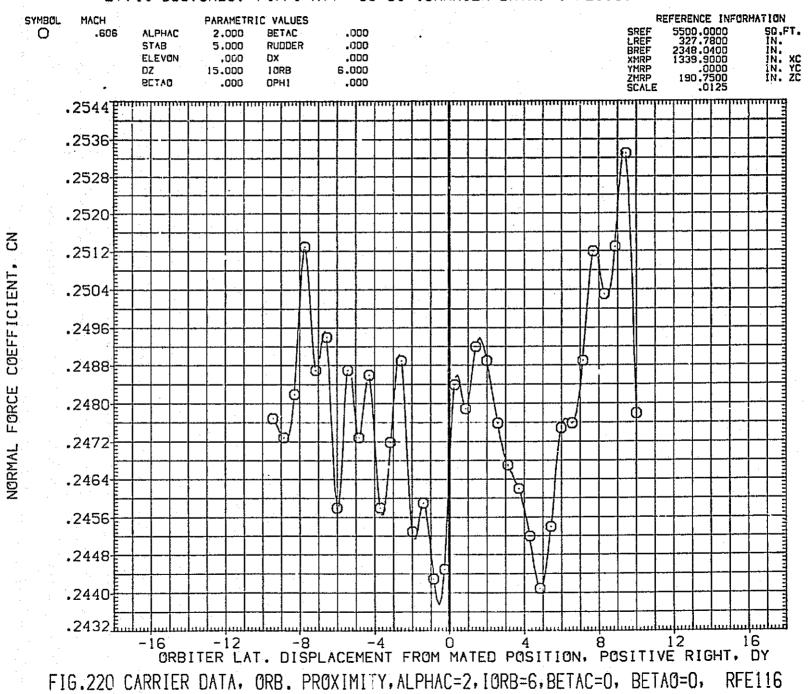
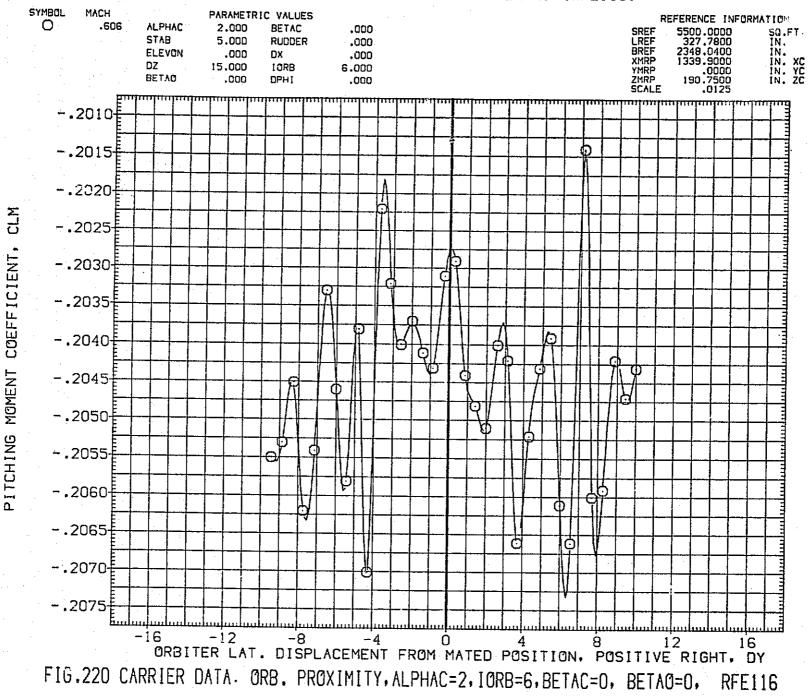


FIG.219 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE115

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE116)



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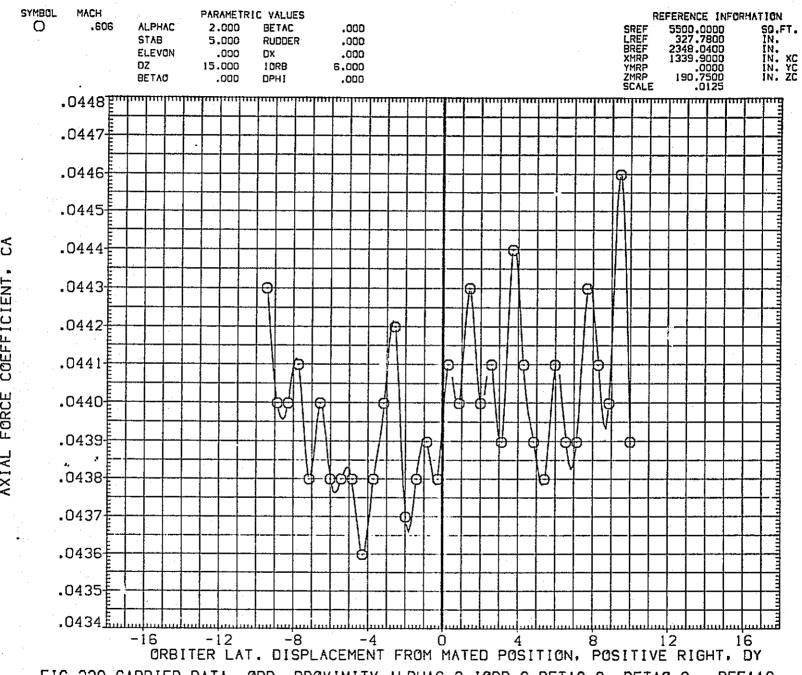


FIG.220 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE116

## LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE116)

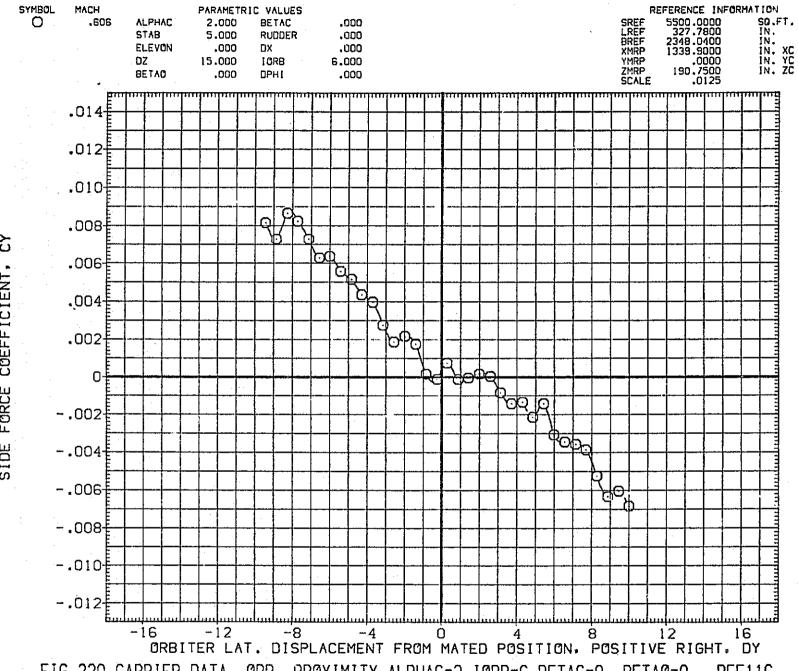


FIG.220 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE116

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE116)

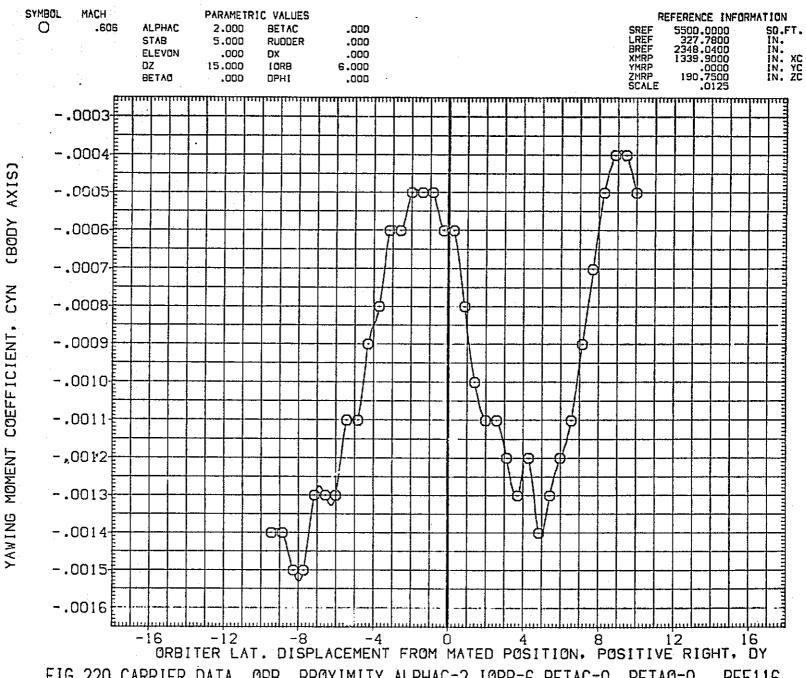
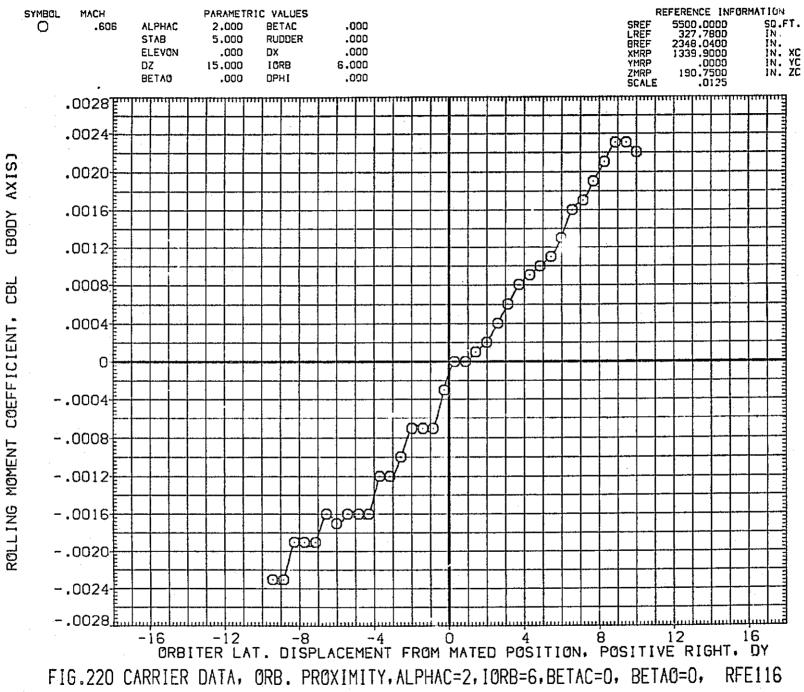


FIG.220 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE116

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE116)



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LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE116)

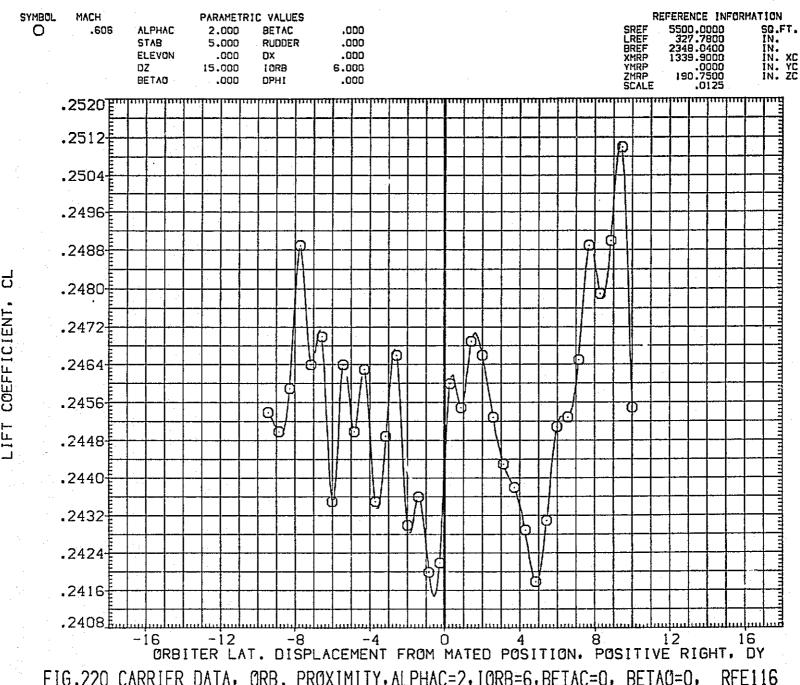
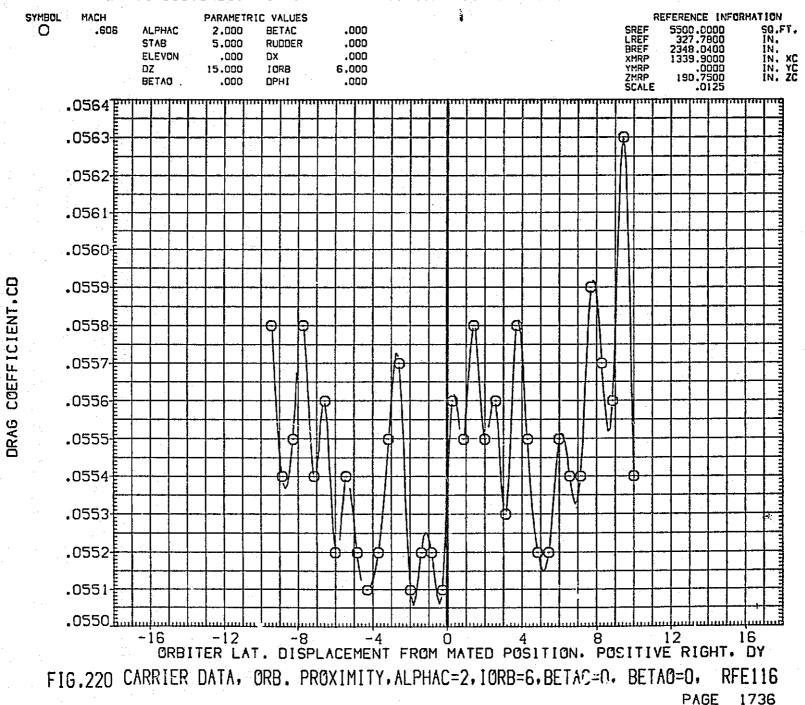


FIG.220 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, PAGE 1735

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE116)



LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE117)

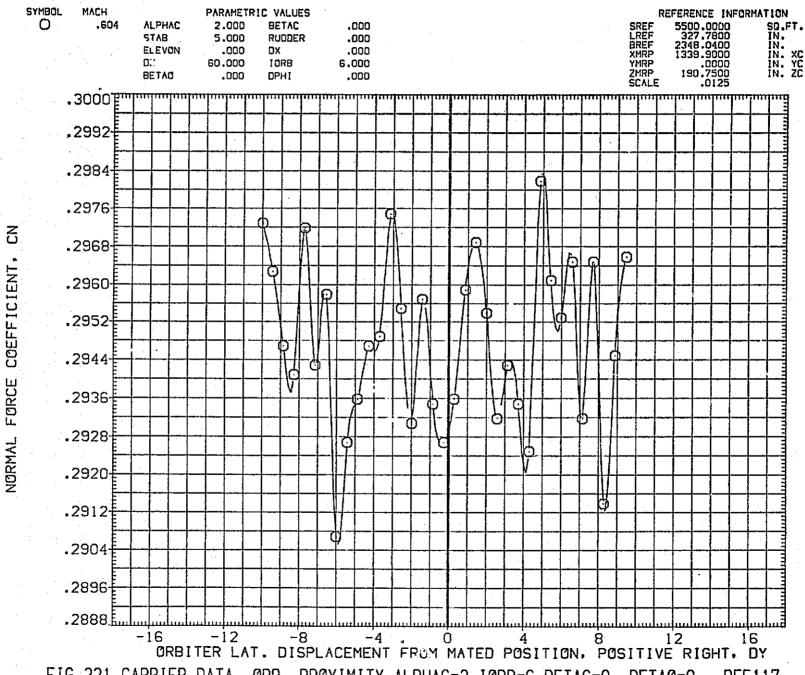


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117

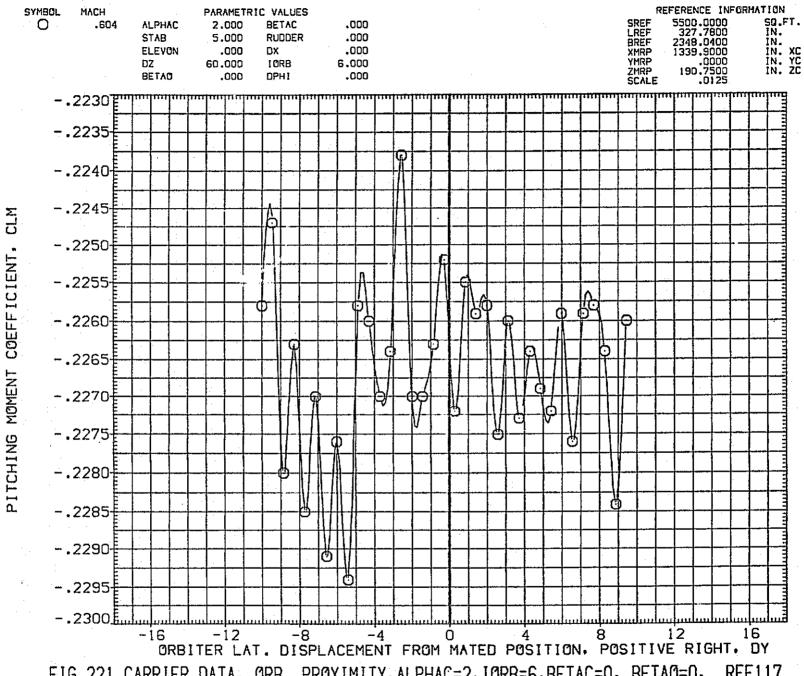


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE117)

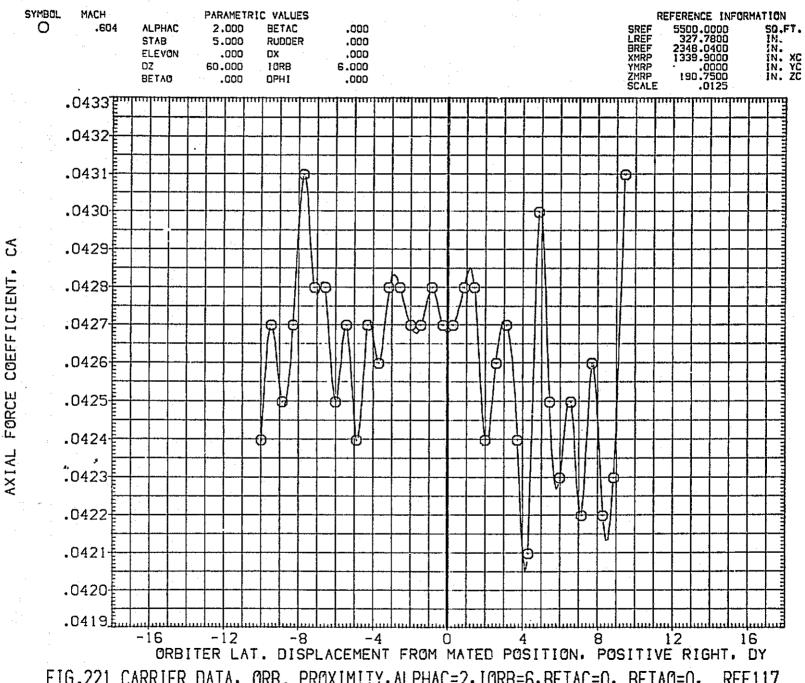


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, PAGE 1739

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE117)

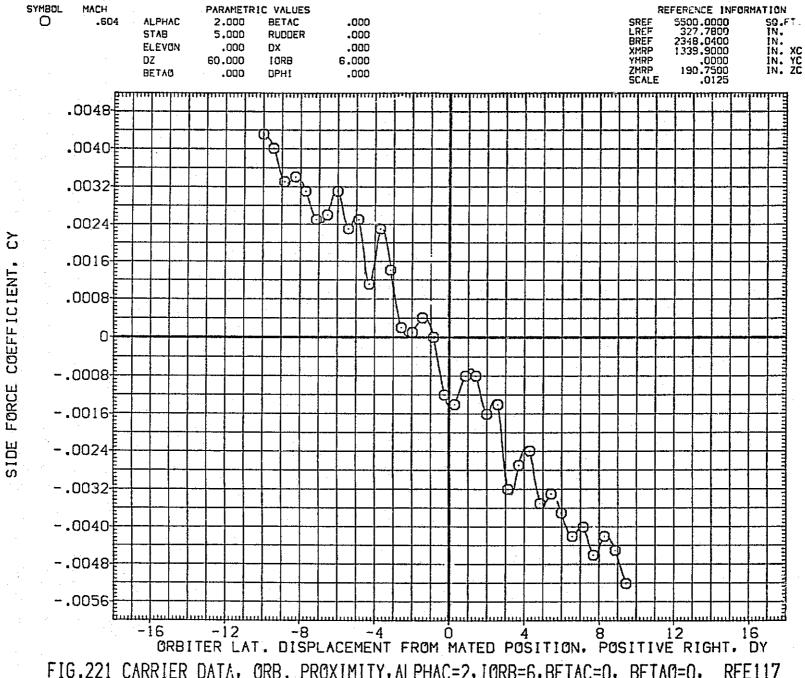


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117 PAGE 1740

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE117)

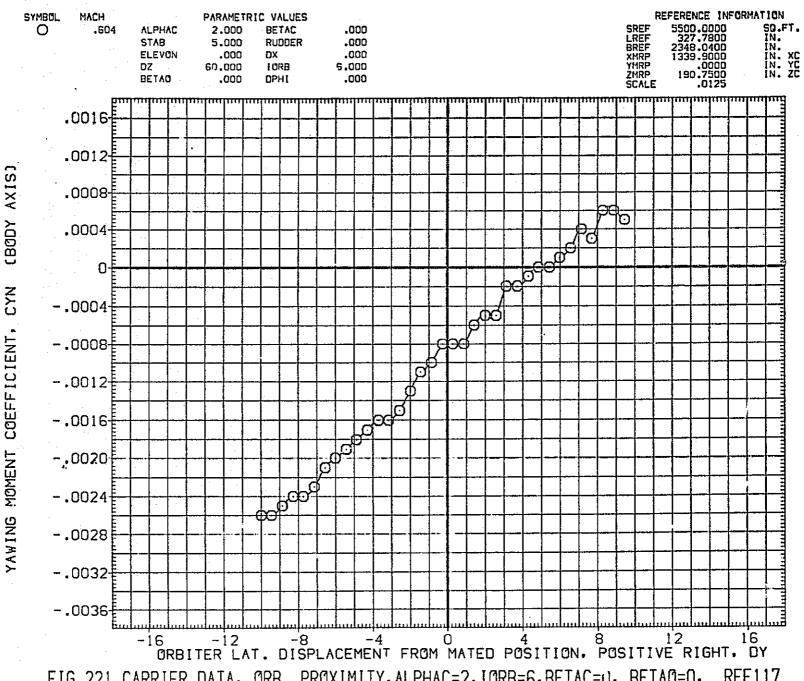


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=U, BETAO=0, RFE117 PAGE 1741

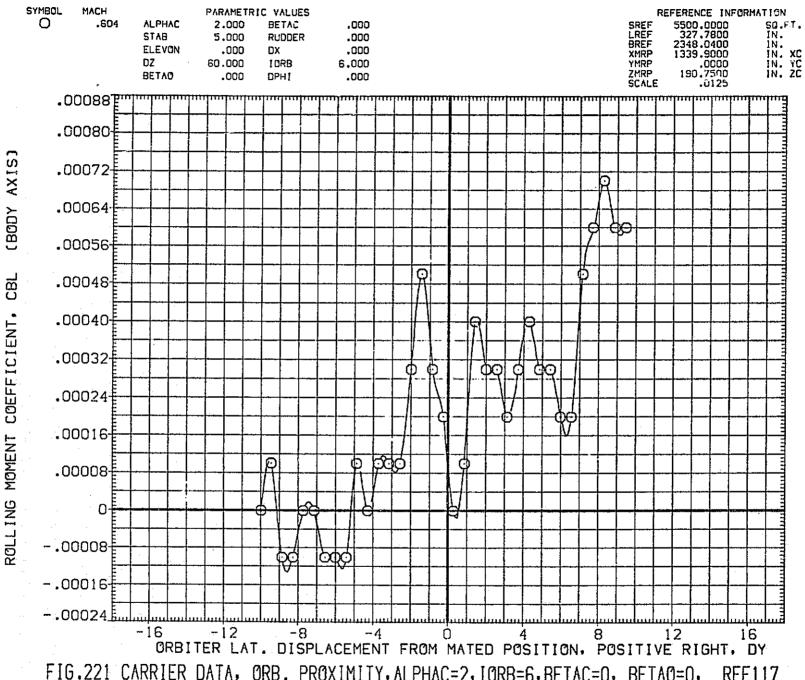


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117 PAGE 1742

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE117)

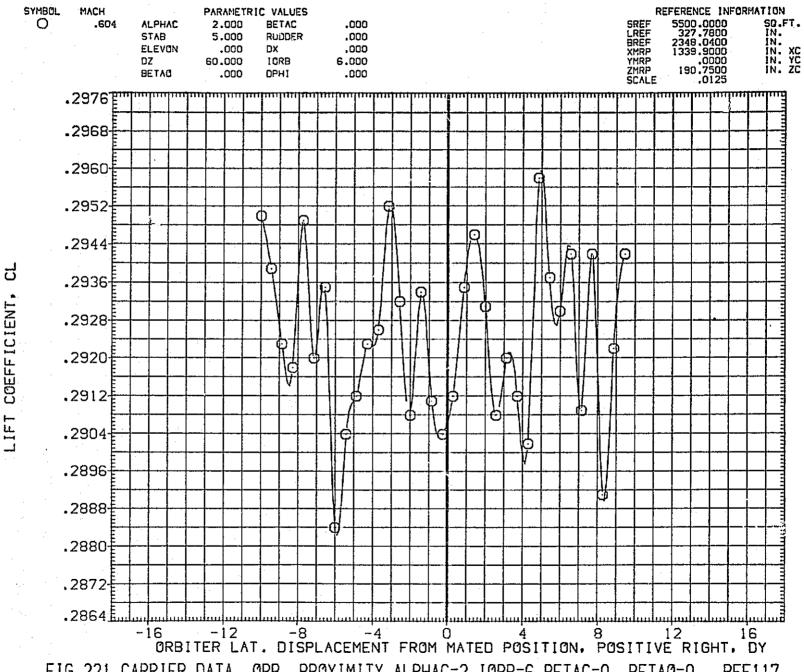


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117

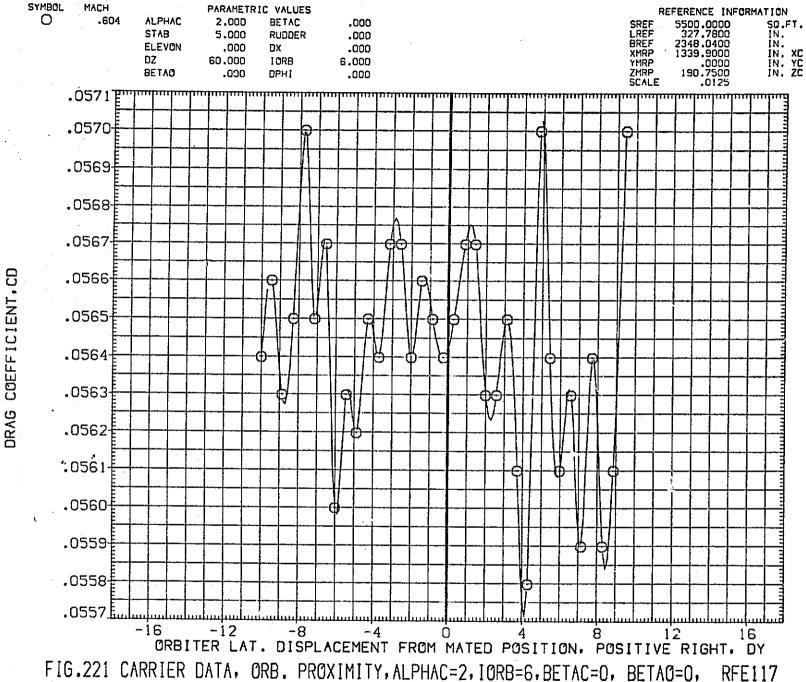


FIG.221 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE117 PAGE 1744

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE118)

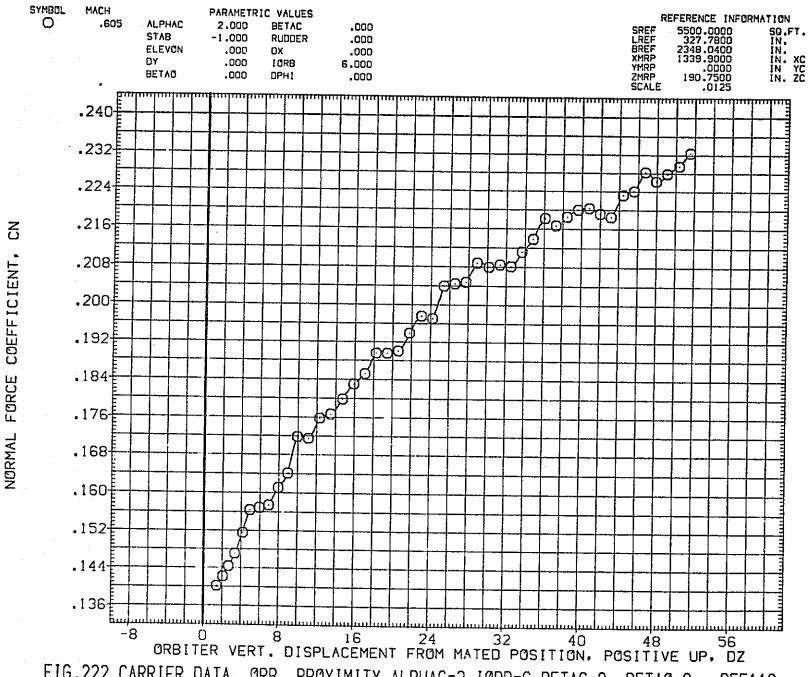


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118

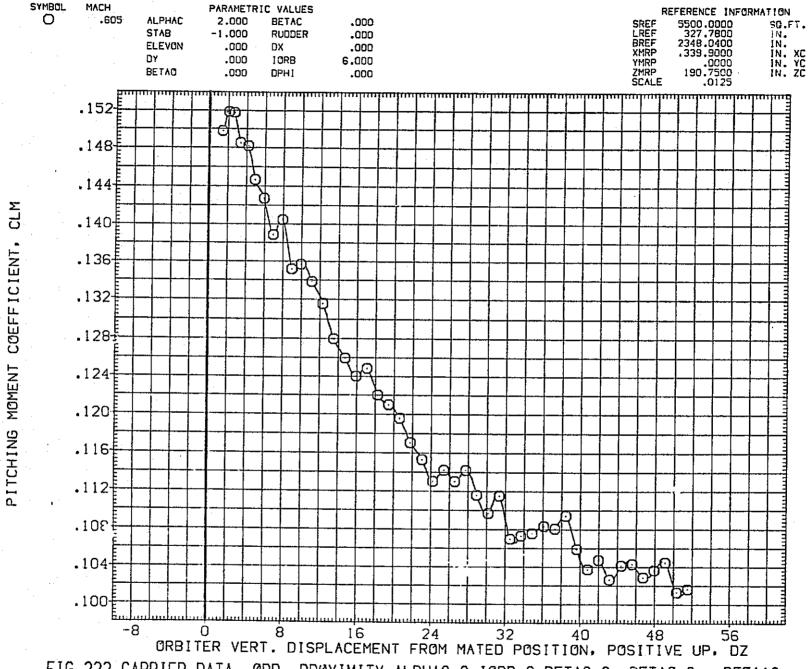


FIG.222 CARRIER DATA, ORB. PRUXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118

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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE118)

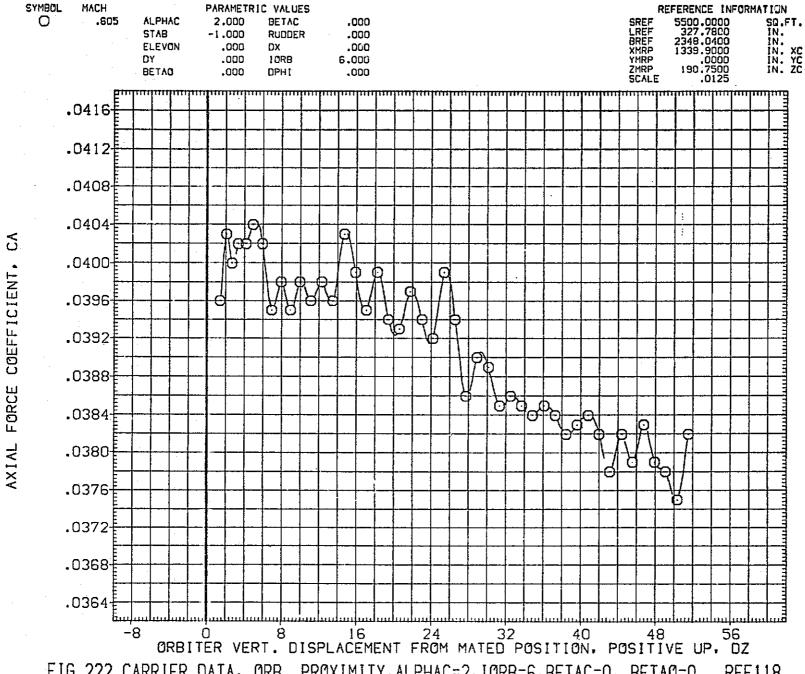


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118

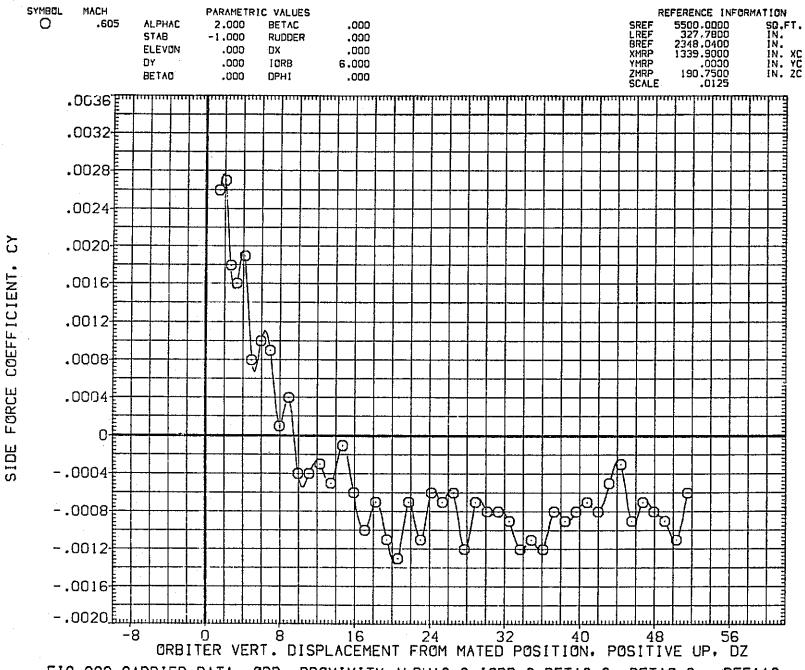


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE118)

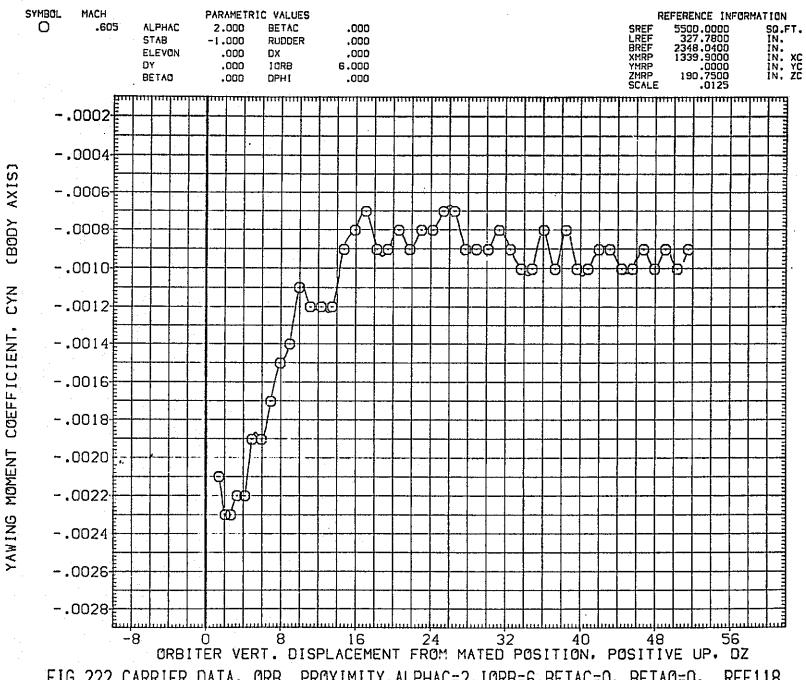


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118

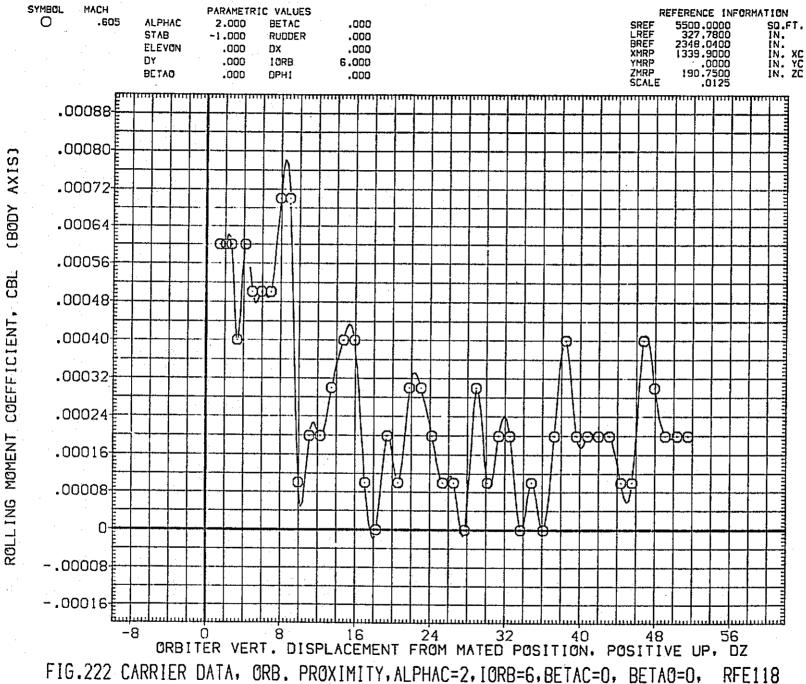


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118 PAGE 1750

LTV44-559(CA26) 747/1 ATY .06 S1 (CARRIER DATA) (RFE118)

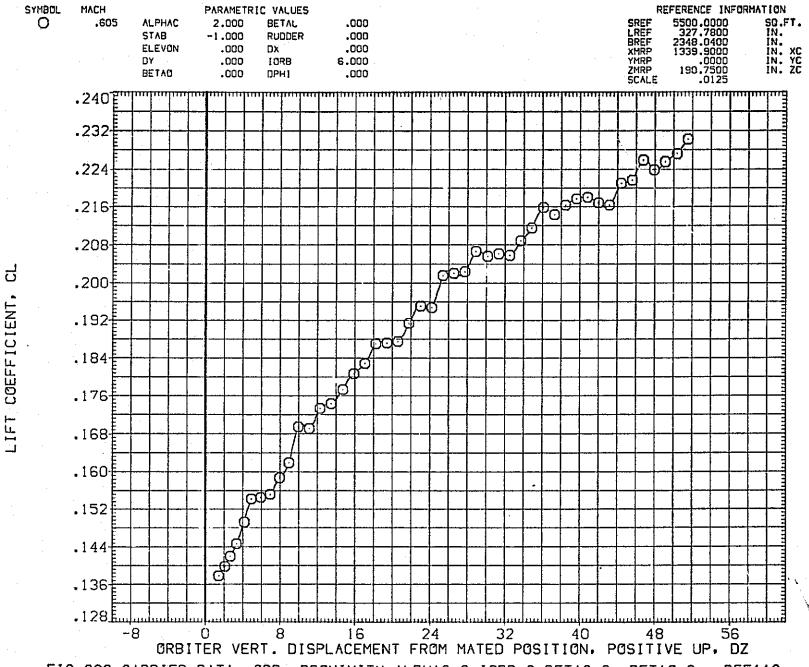


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118
PAGE 1751

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE118)

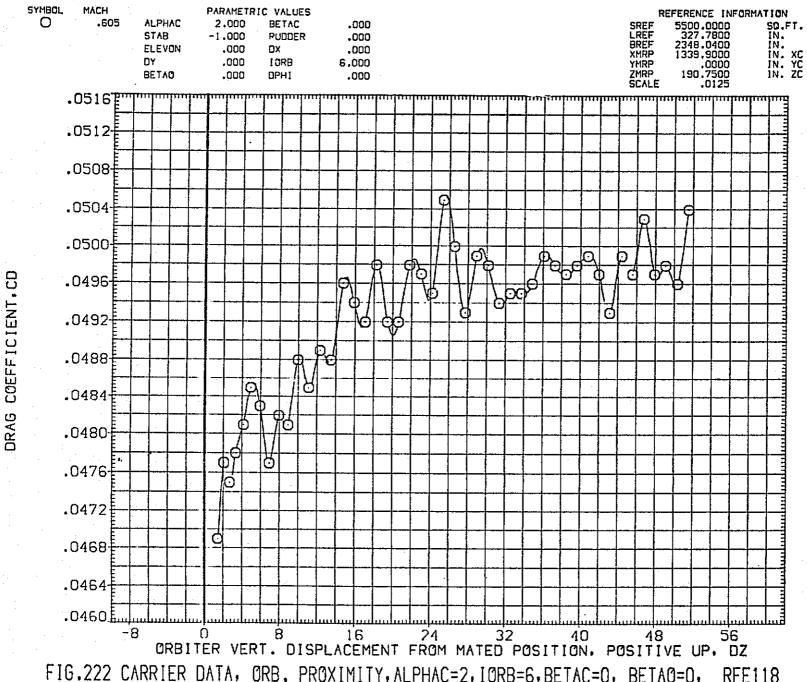


FIG.222 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE118 PAGE 1752

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE119)

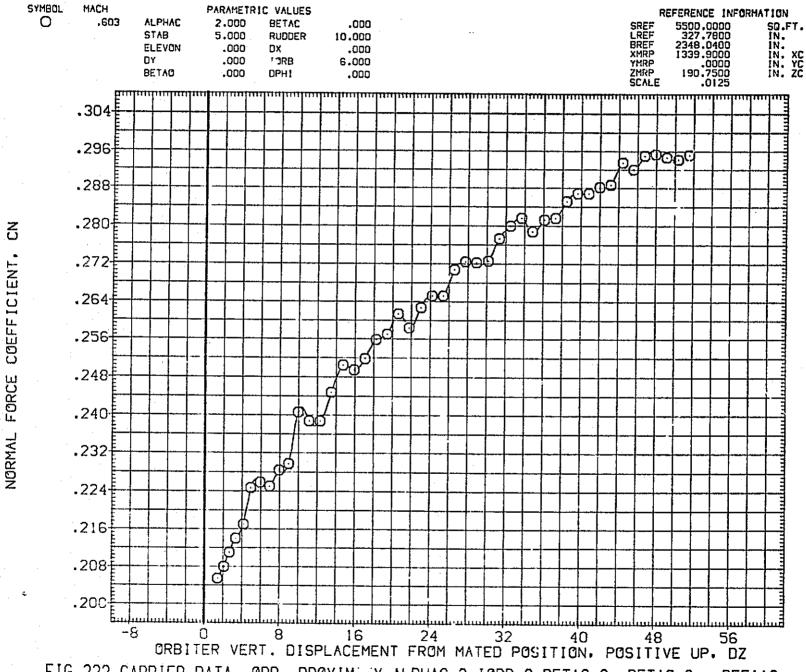


FIG.223 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE119

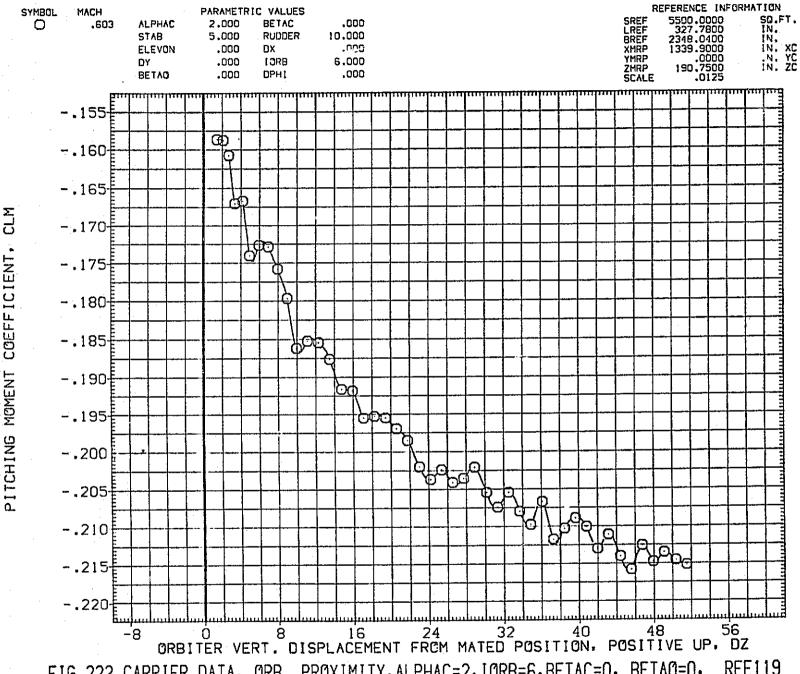


FIG.223 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE119 PAGE 1754

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE119)

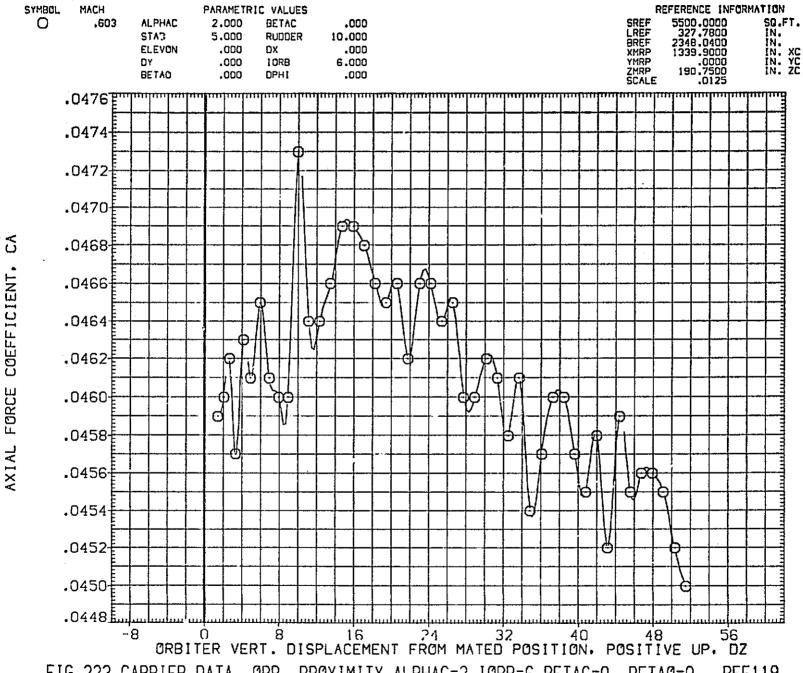


FIG.223 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE119

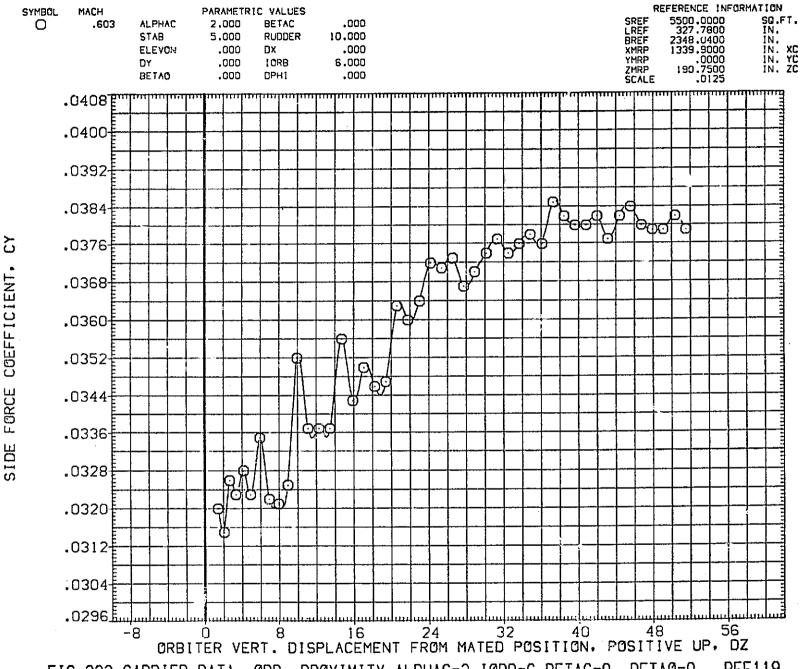
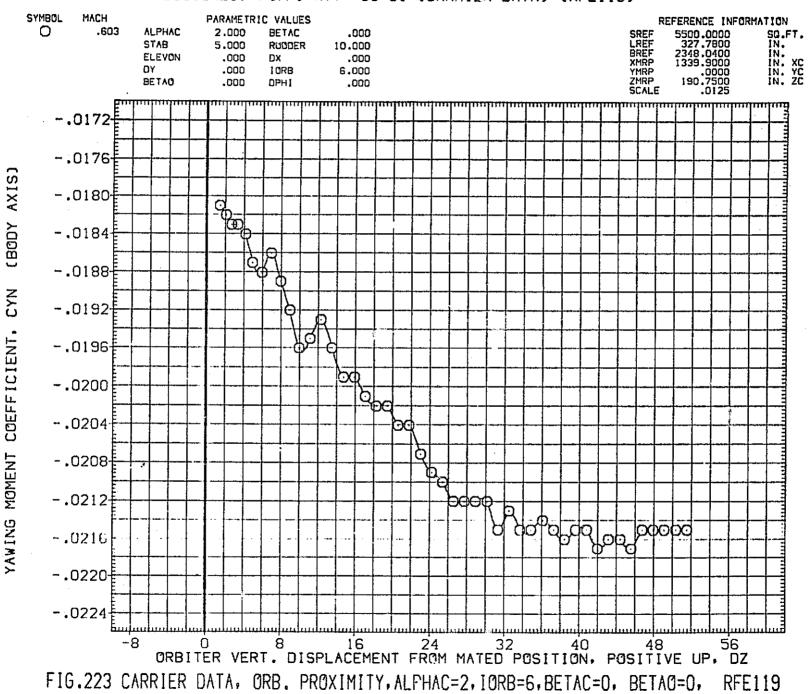


FIG.223 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAQ=0, RFE119
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(3)

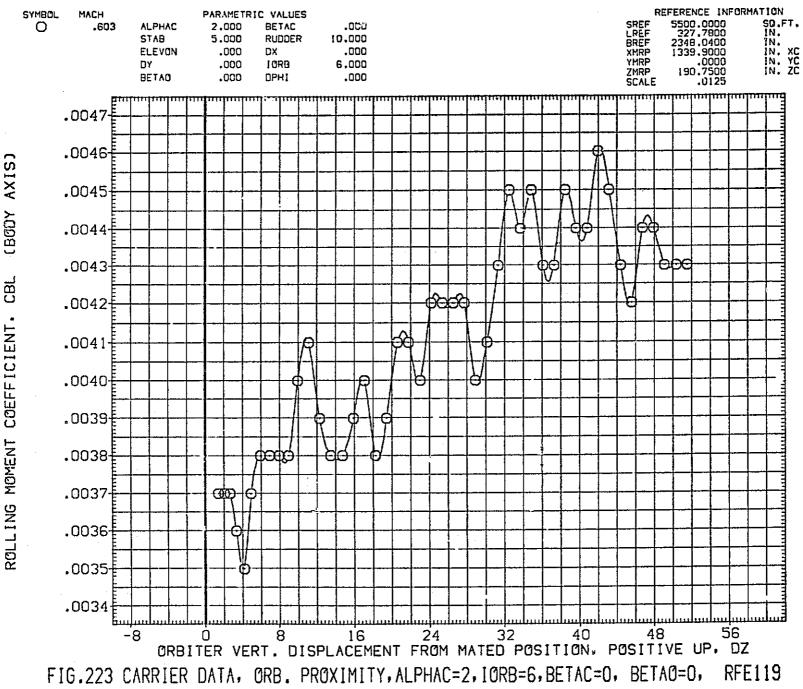
LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE119)



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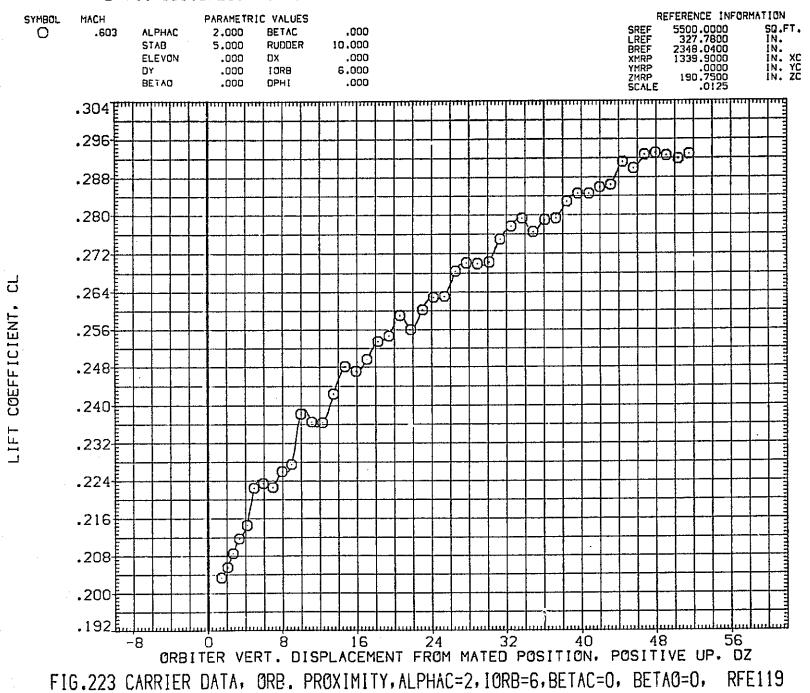
LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE119)



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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE119)

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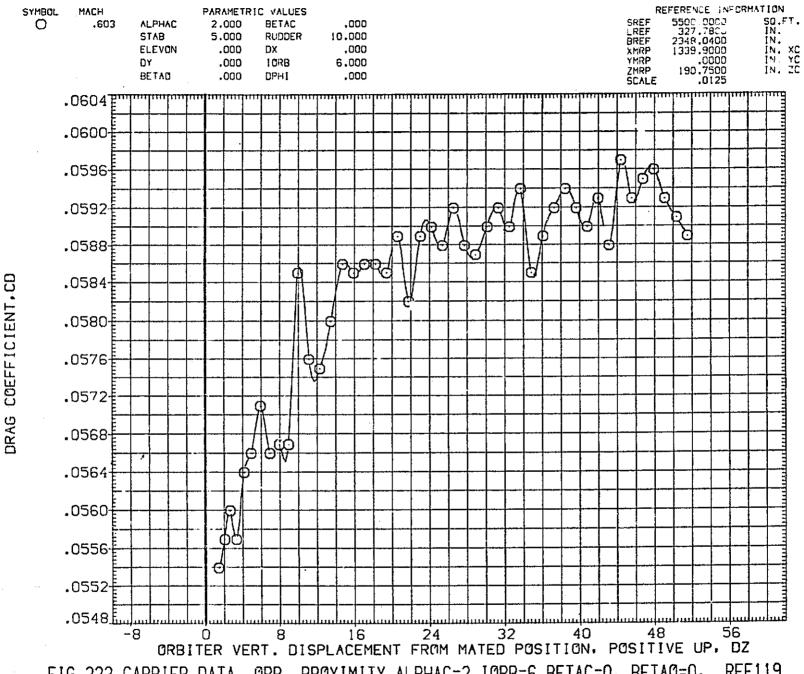


FIG.223 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=0, BETAO=0, RFE119
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE120)

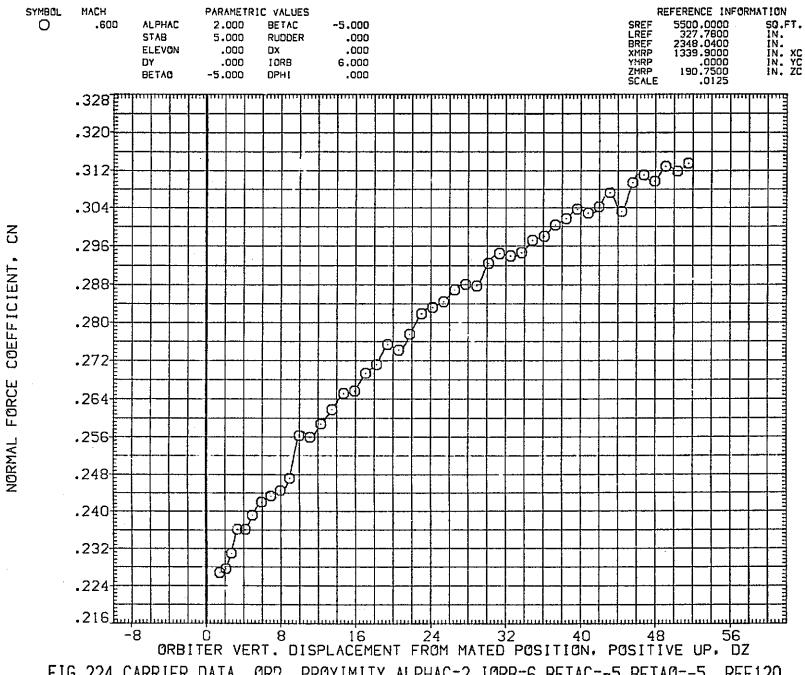


FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120
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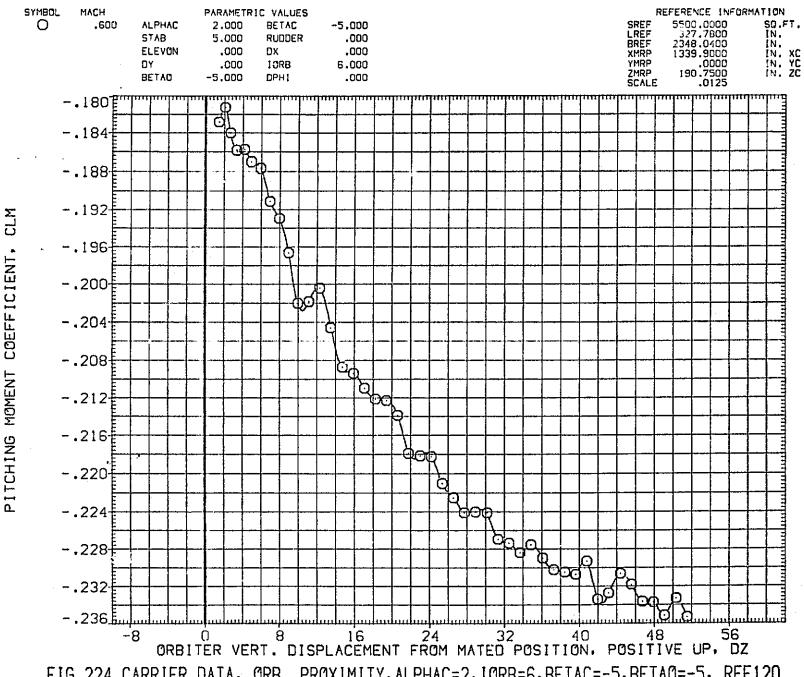
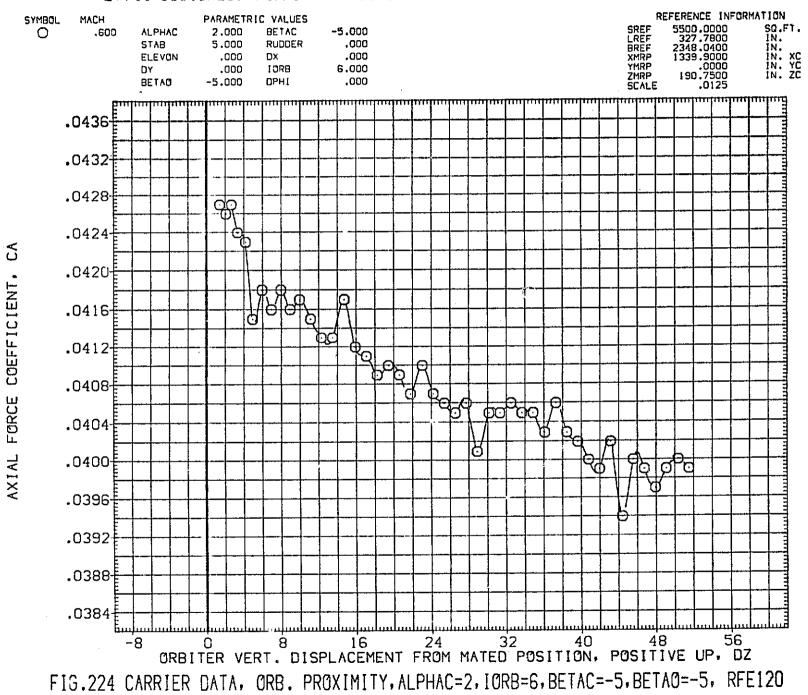


FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE120)



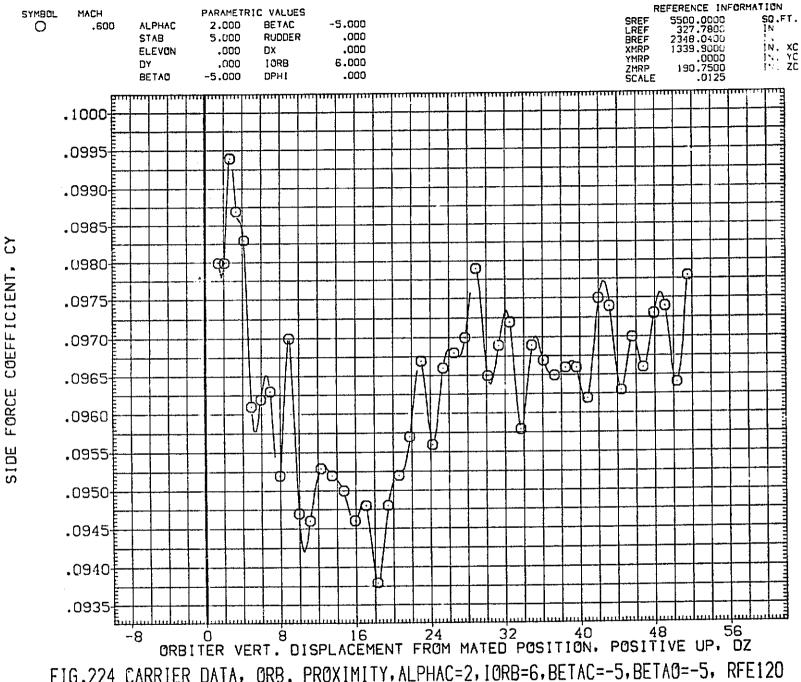


FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120 PAGE 1764

V ... ;

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE120)

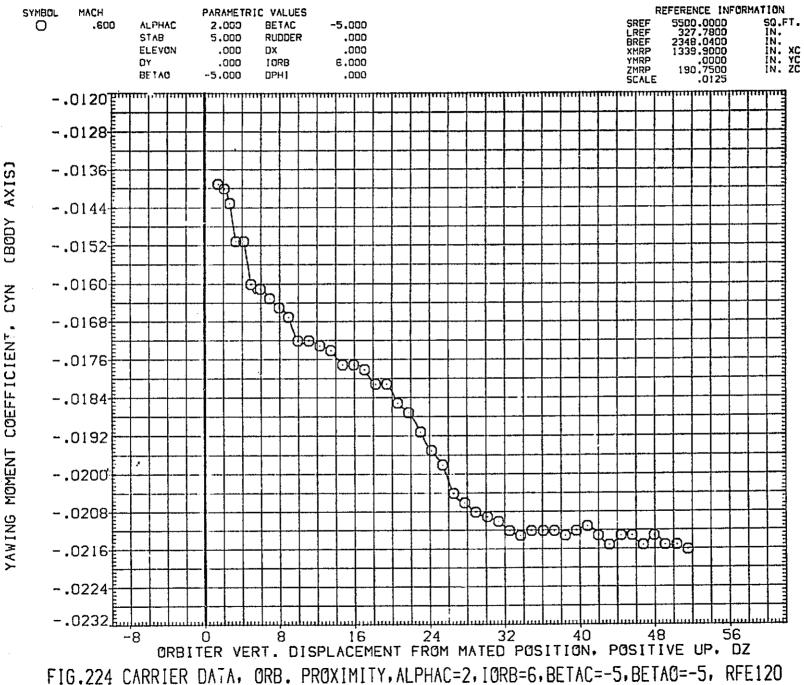
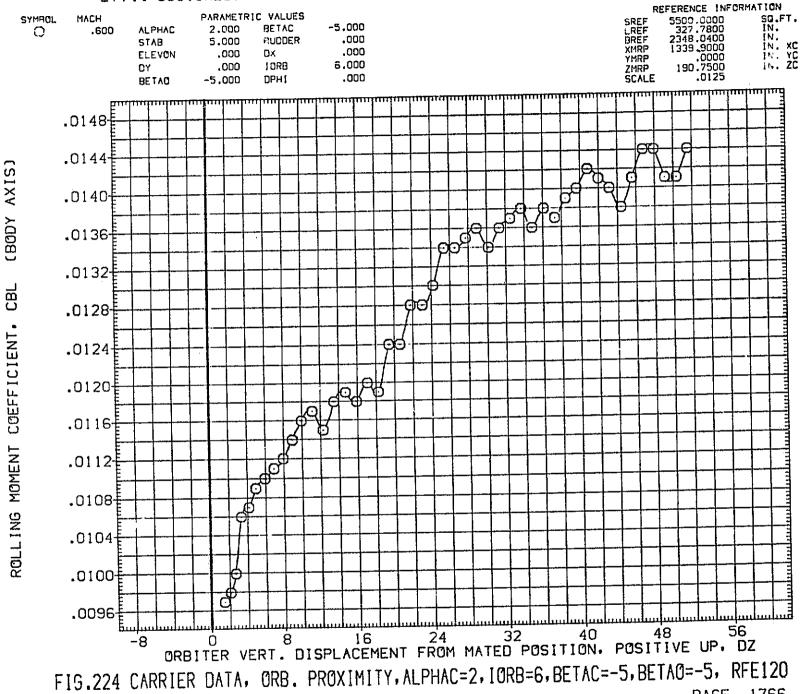


FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120 PAGE 1765



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FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120

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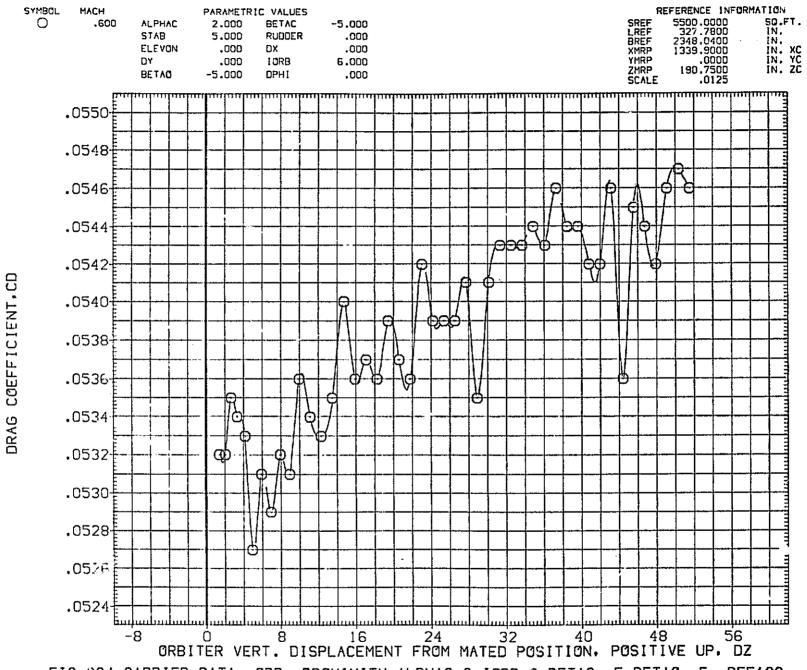
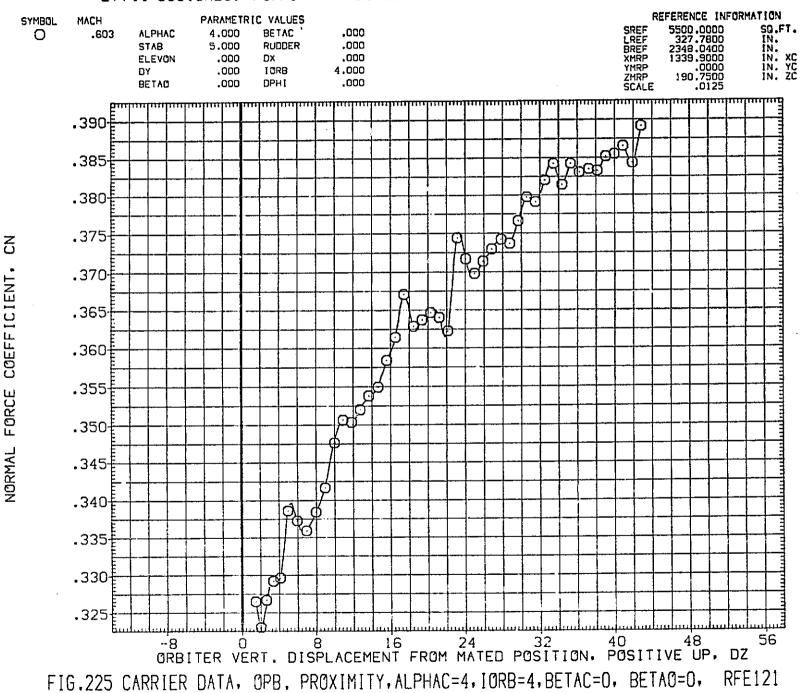


FIG.224 CARRIER DATA, ORB. PROXIMITY, ALPHAC=2, IORB=6, BETAC=-5, BETAO=-5, RFE120
PAGE 1768

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE121)



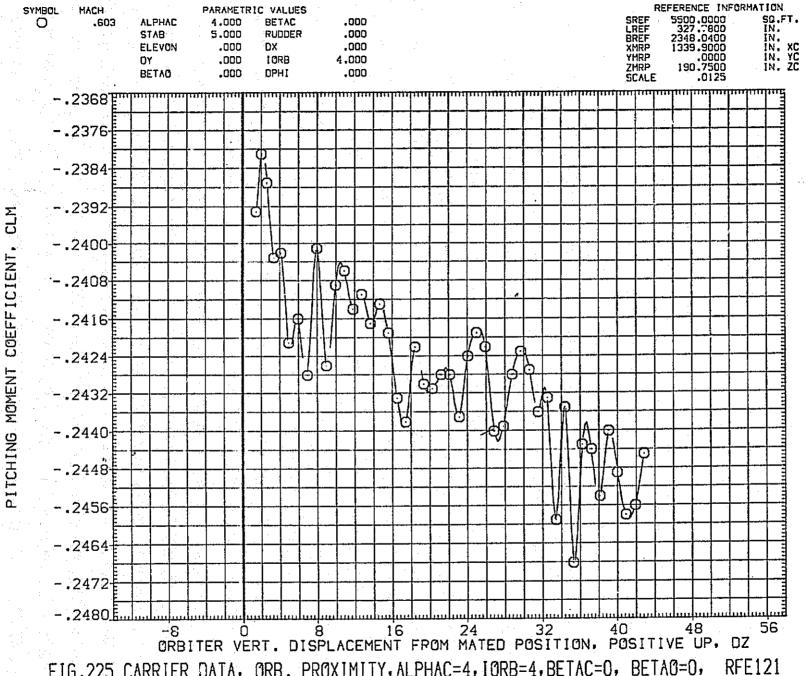
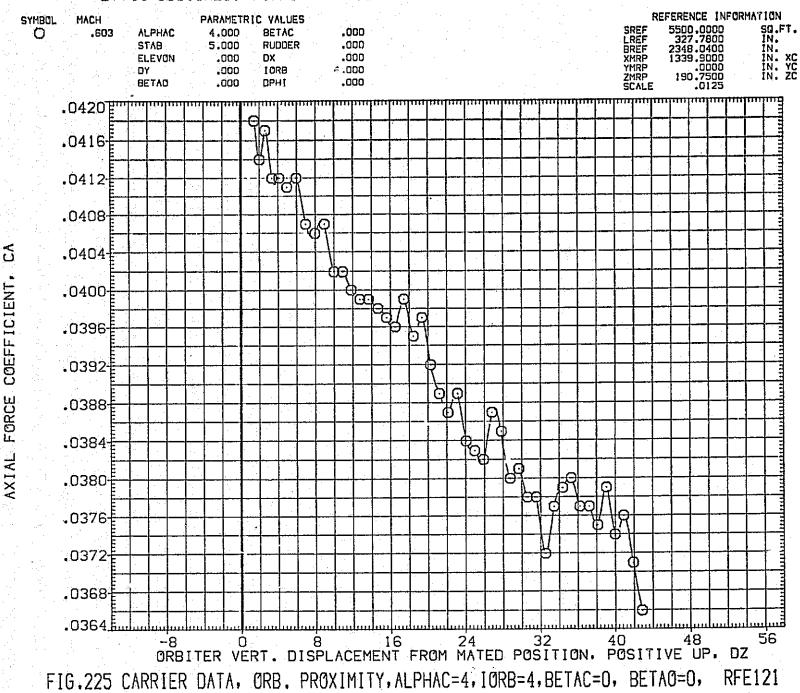


FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAC=0, RFE121 PAGE 1770

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE121)



LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE121)

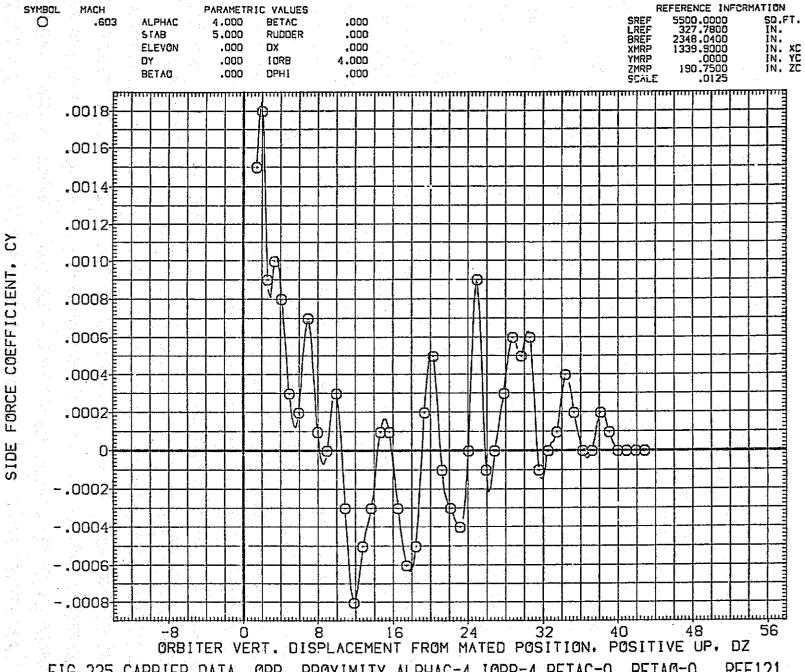


FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE121

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE121)

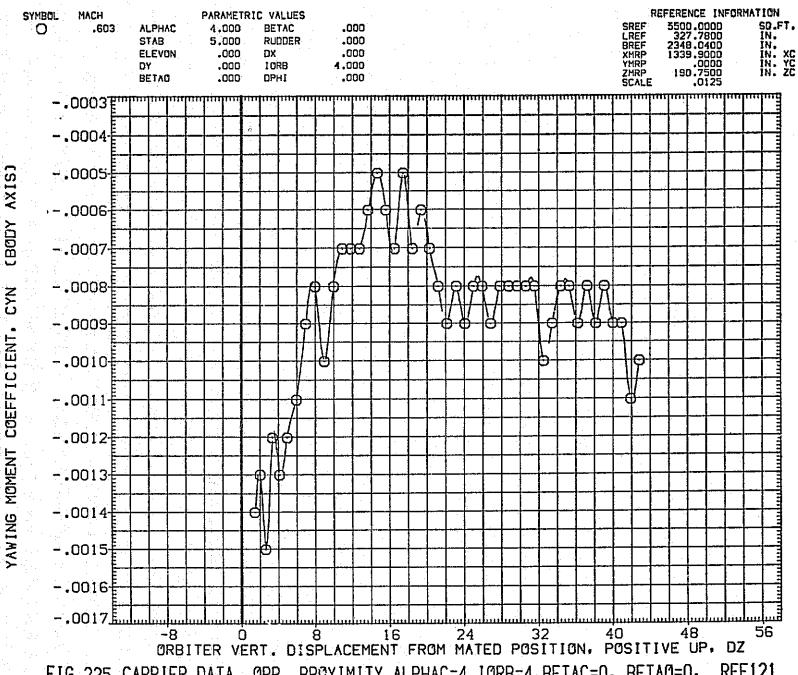


FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE121

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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE121)

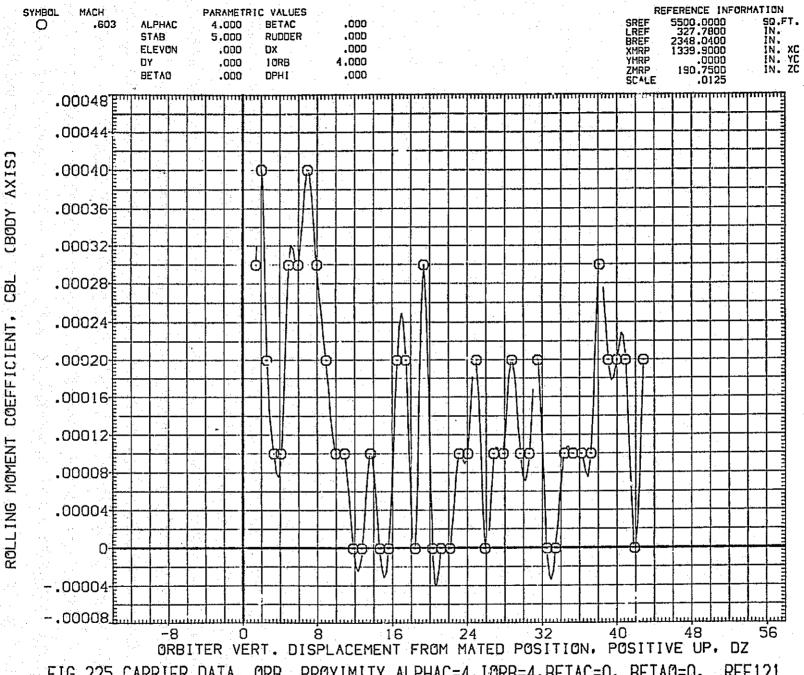


FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE121

FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE121

LTV44~559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE121)

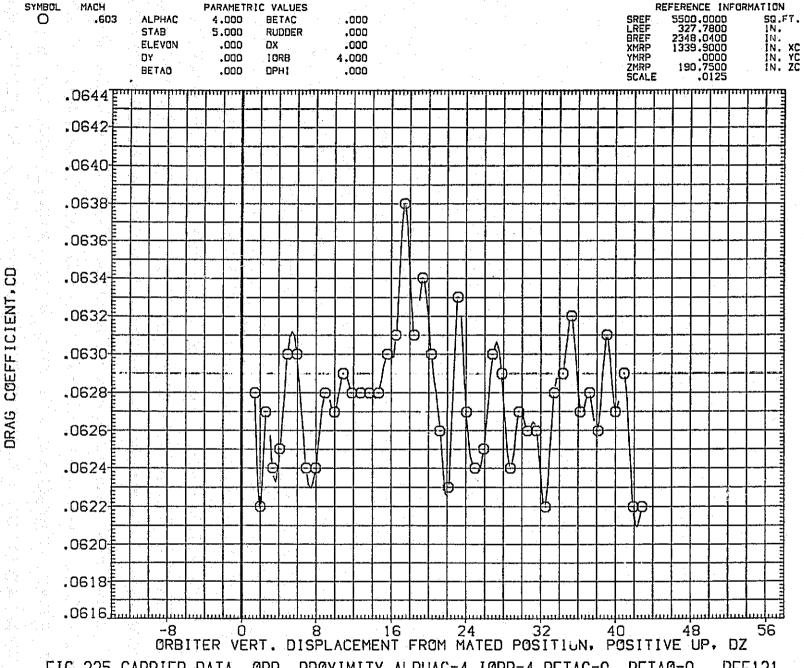


FIG.225 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=4, BETAC=0, BETAO=0, RFE121

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE122)

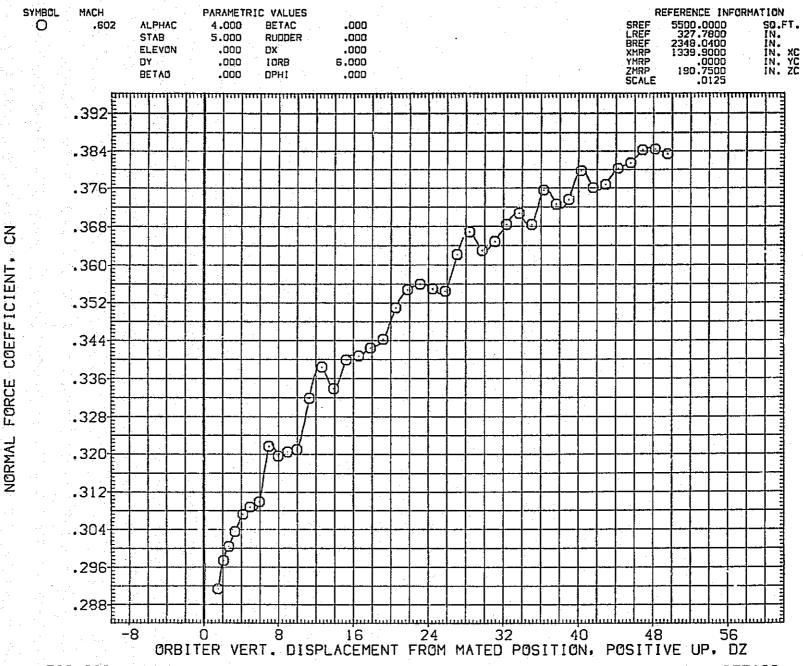


FIG.226 CARRIER DATA. ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE122

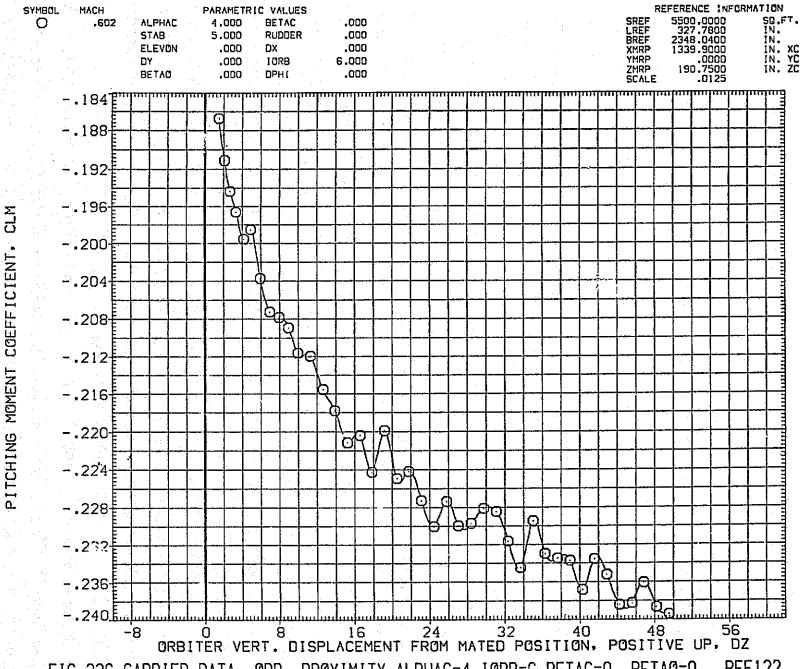


FIG.226 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE122

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE122)

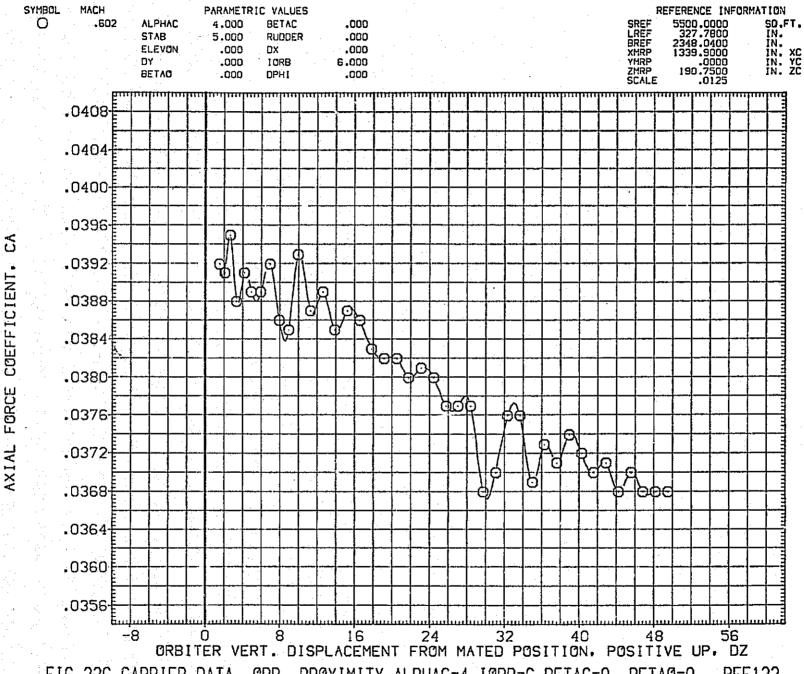


FIG.226 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE122

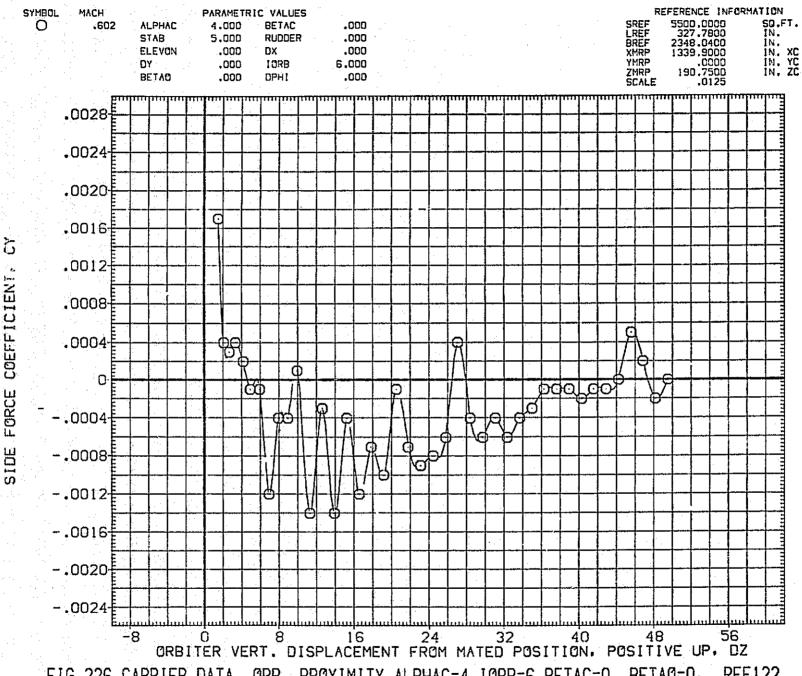
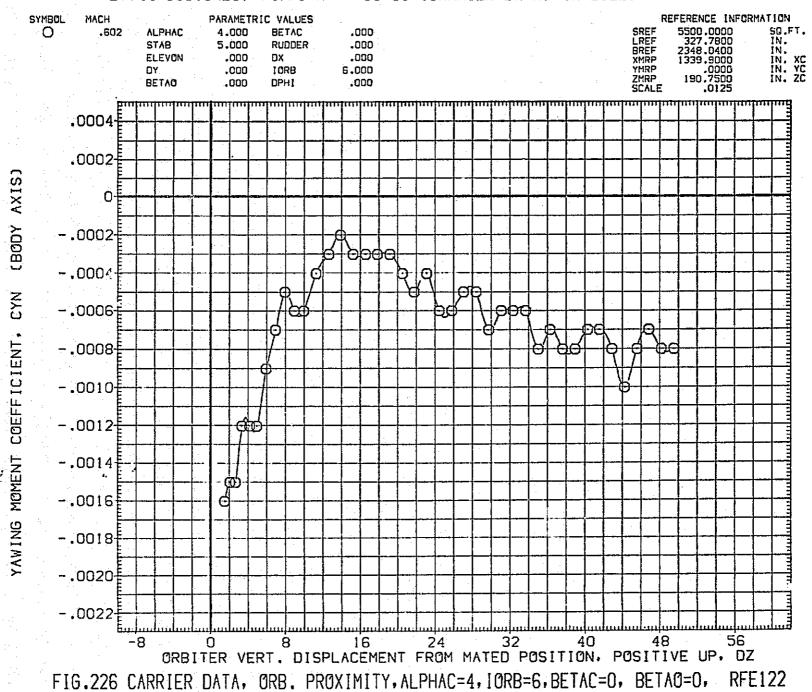
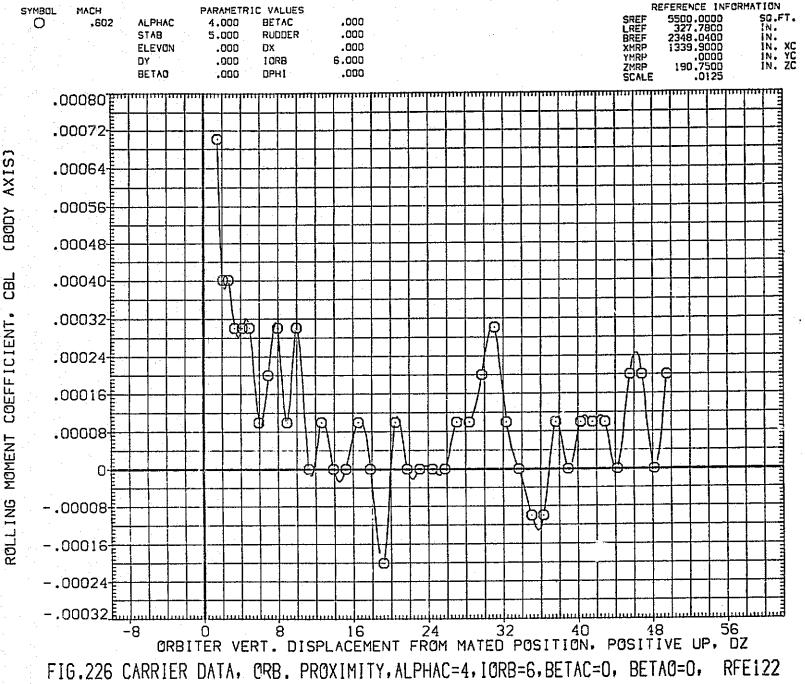


FIG.226 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE122

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE122)

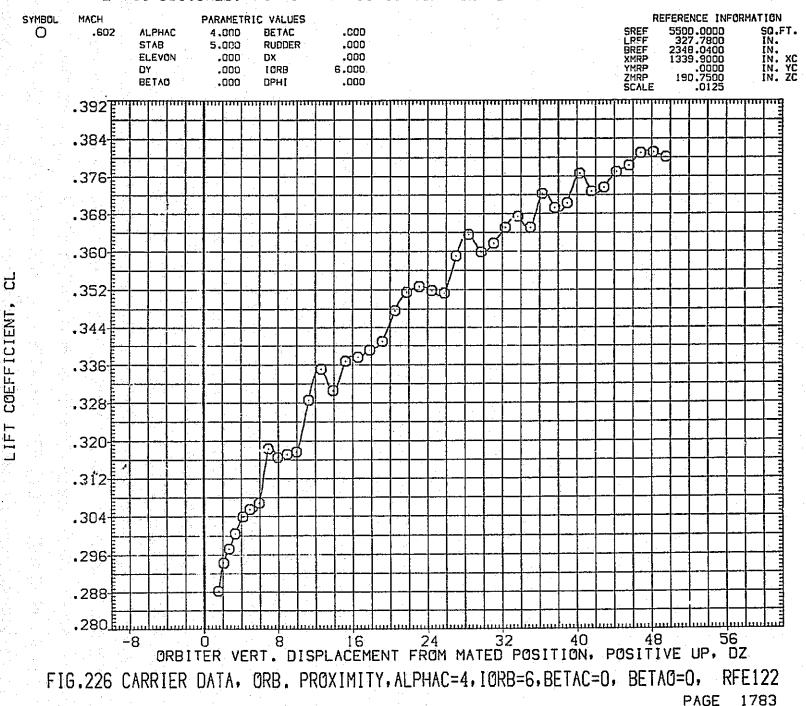


LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE122)



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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE122)



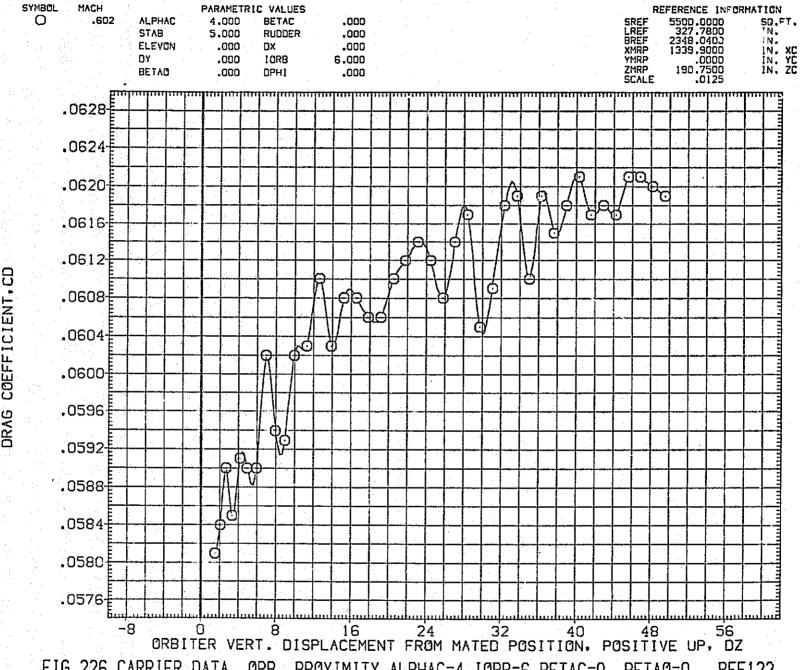


FIG.226 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=6, BETAC=0, BETAO=0, RFE122

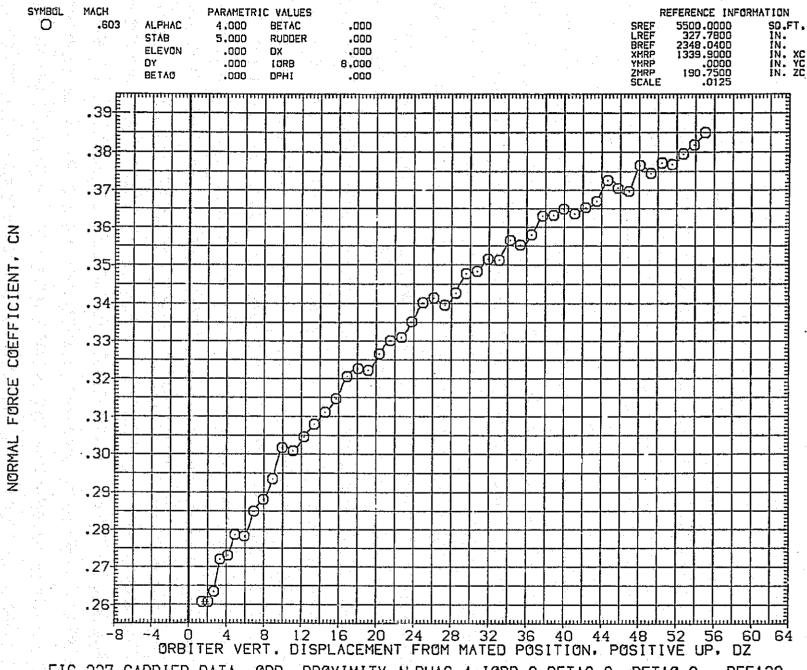


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

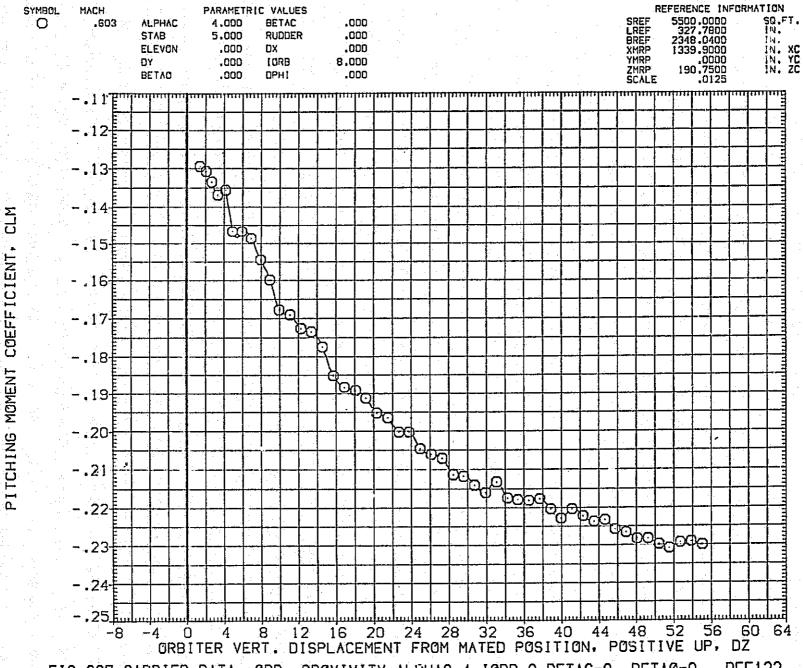
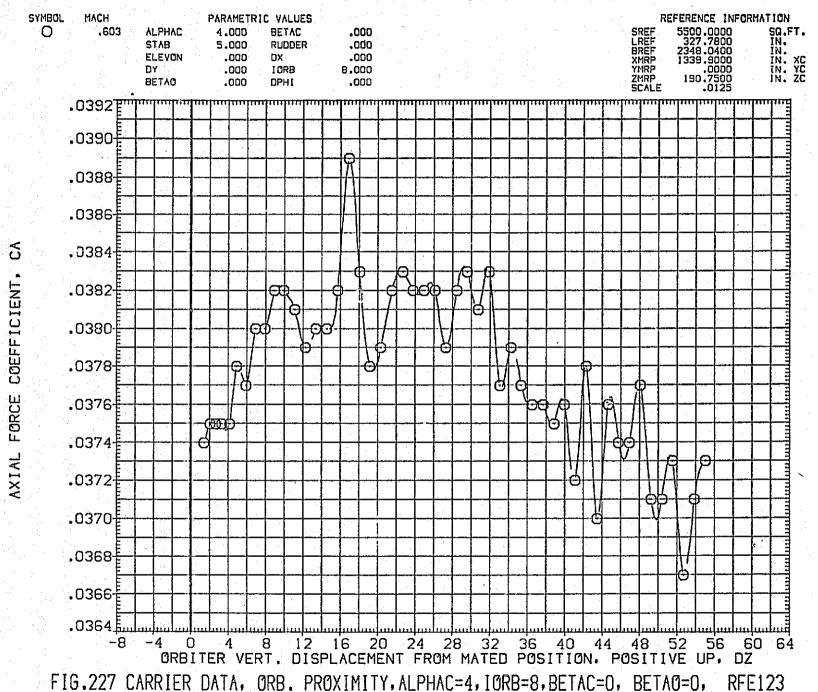


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE123)



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LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE123)

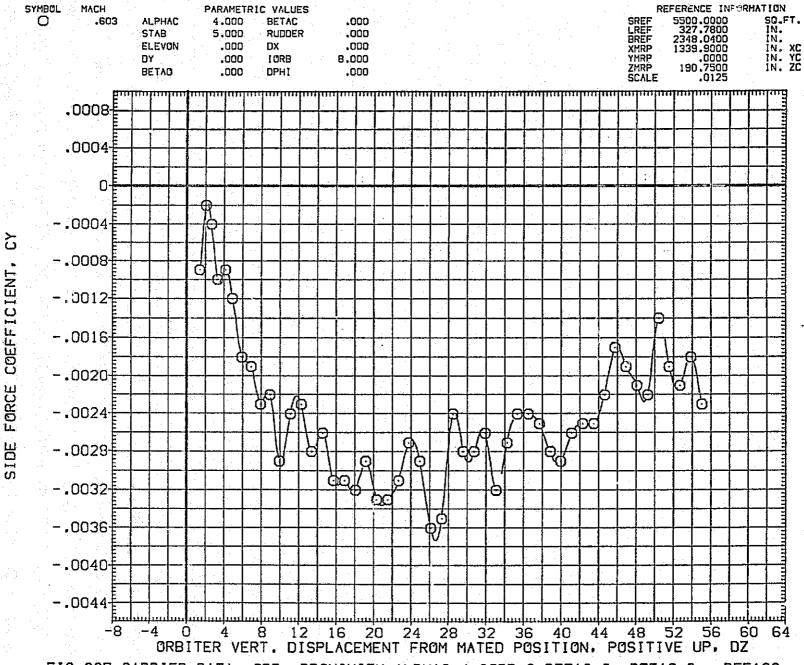


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

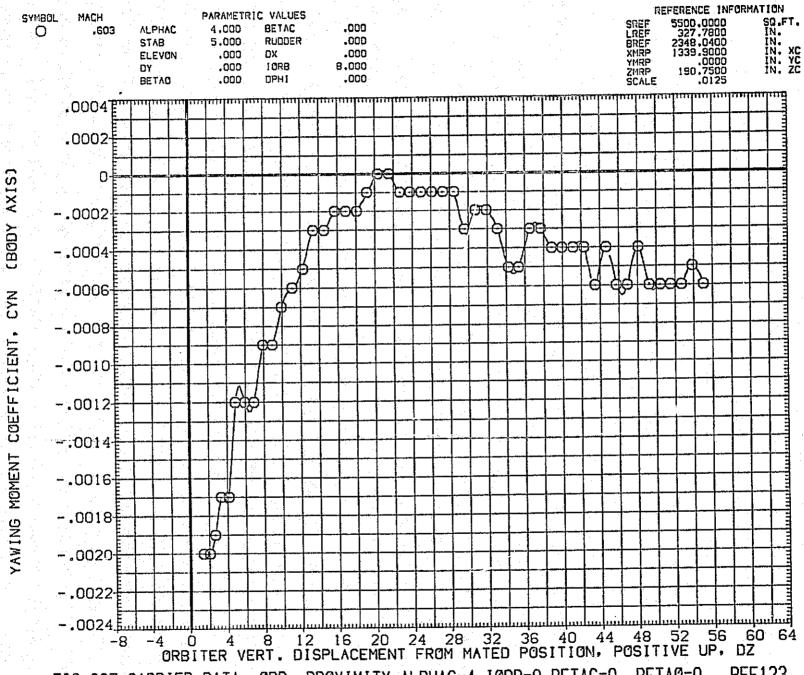


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

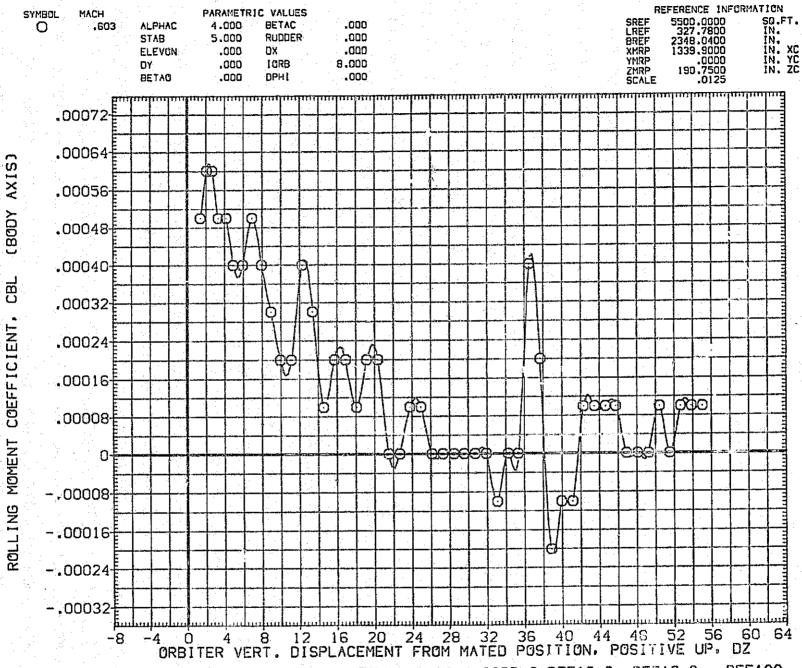


FIG.227 CARRIER DATA. ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

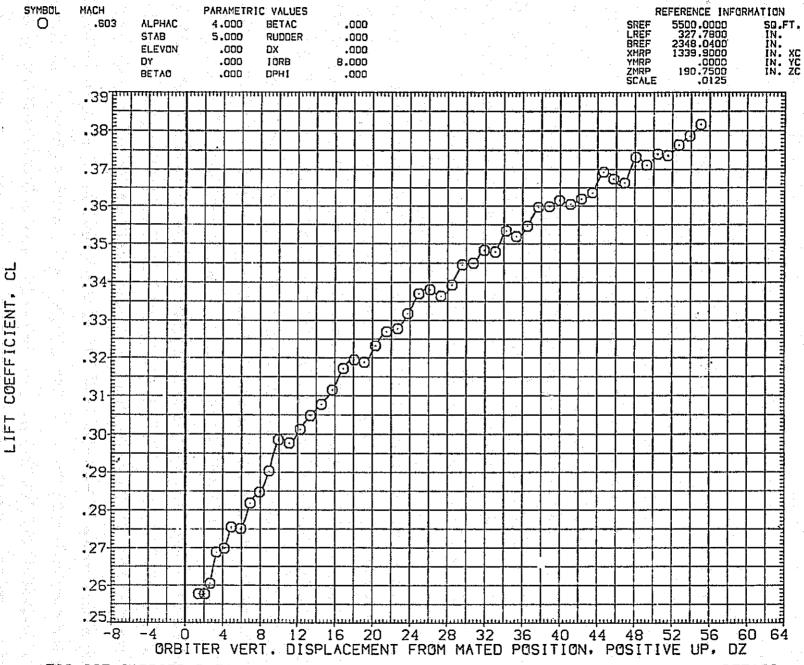


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

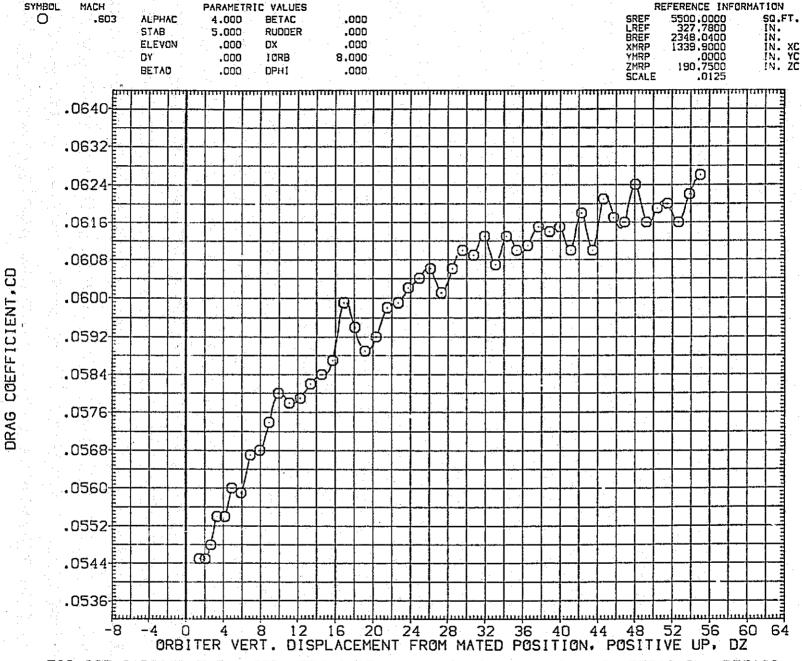


FIG.227 CARRIER DATA, ORB. PROXIMITY, ALPHAC=4, IORB=8, BETAC=0, BETAO=0, RFE123

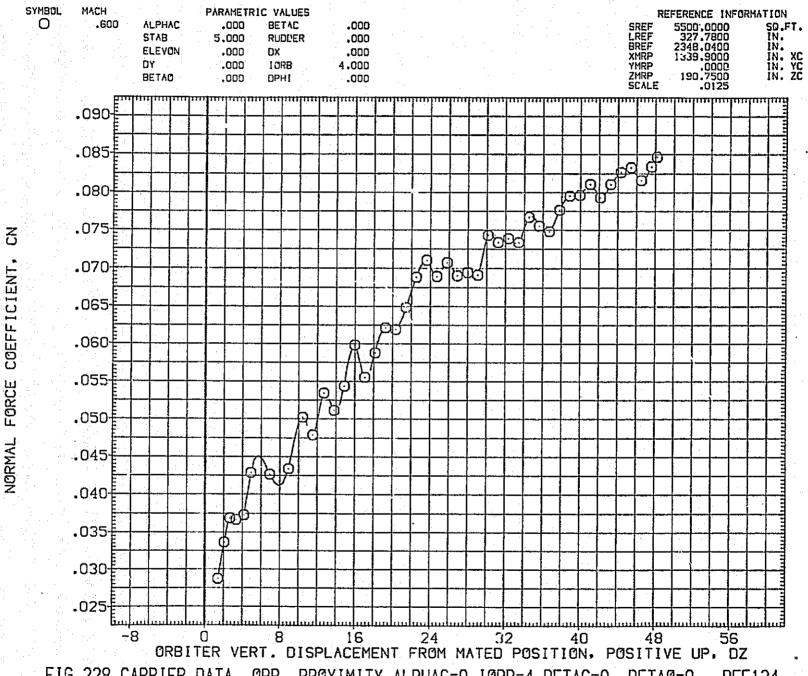


FIG.228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0, RFE124

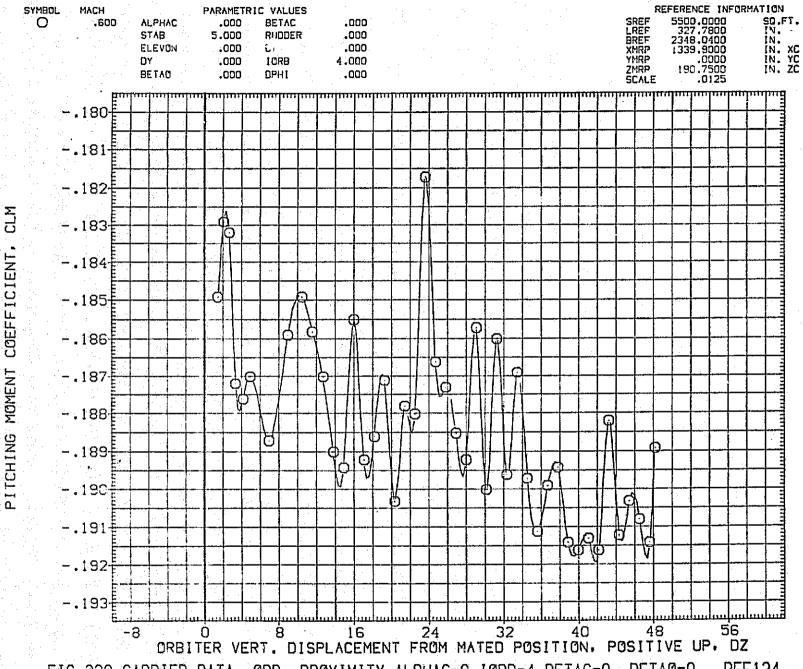


FIG. 228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4.BETAC=0, BETAO=0, RFE124

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE124)

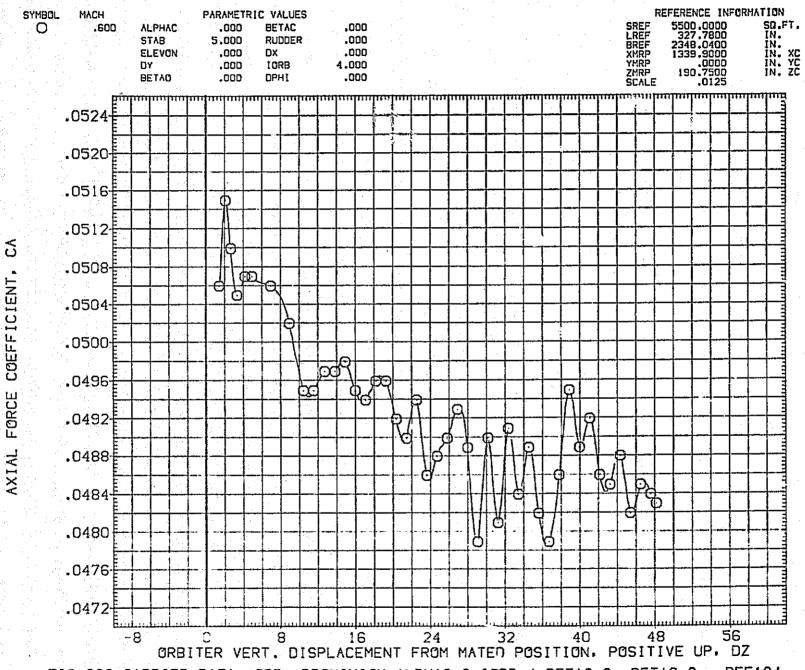


FIG.228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0, RFE124

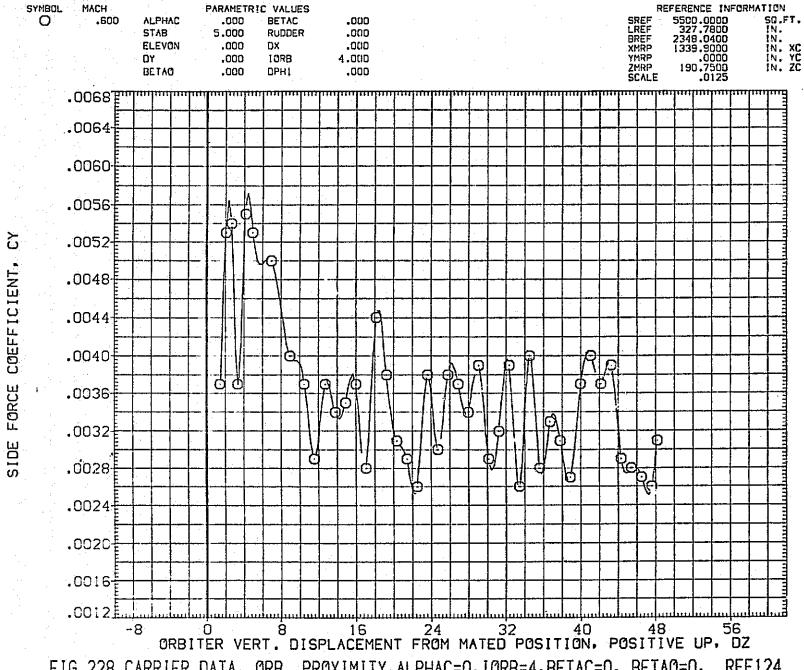


FIG. 228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0, RFE124

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE124)

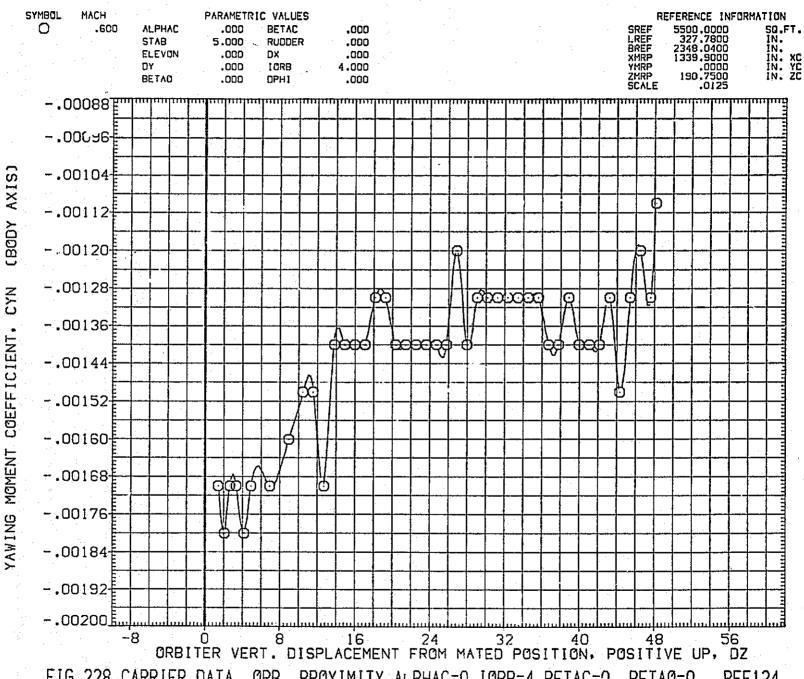
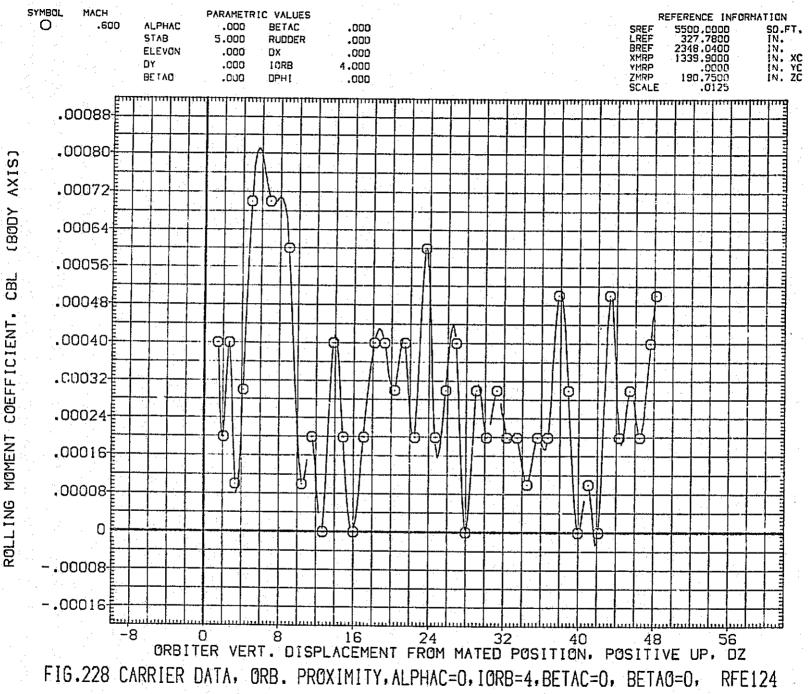


FIG.228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0, RFE124

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE124)



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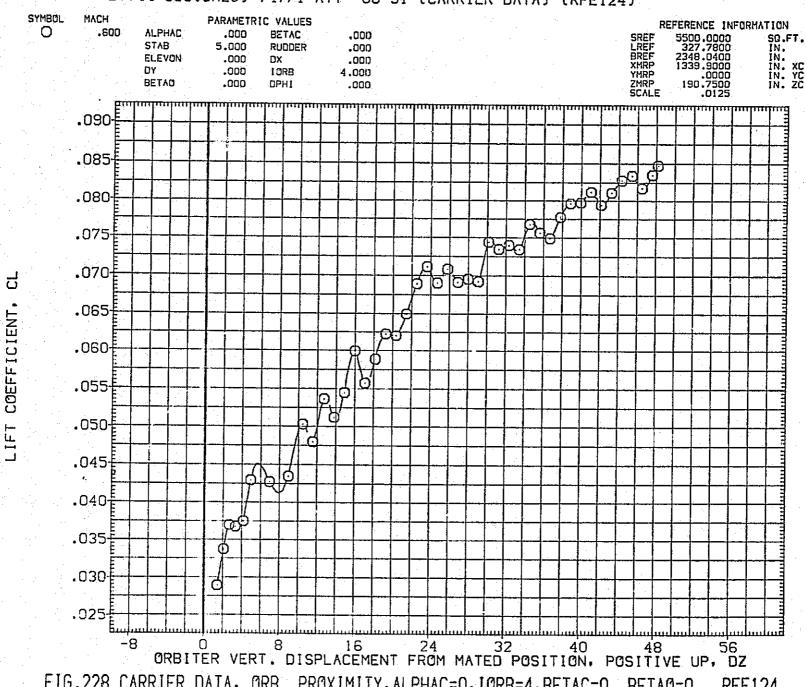


FIG.228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0,

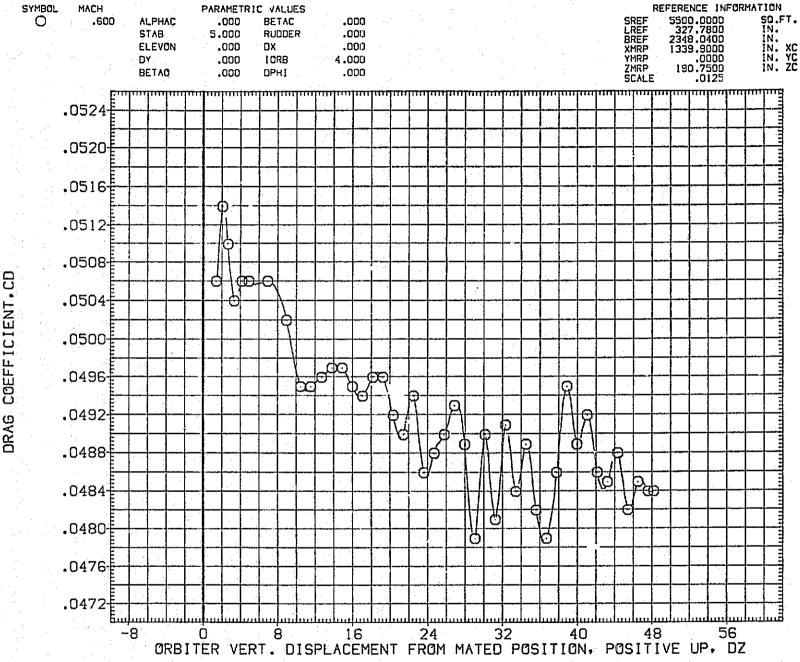


FIG.228 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=4, BETAC=0, BETAO=0, RFE124

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE125)

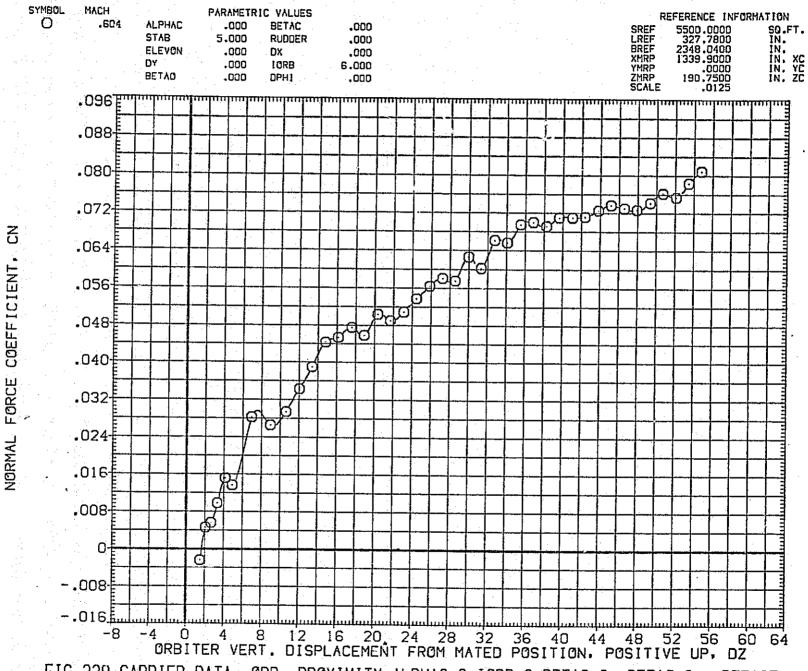


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

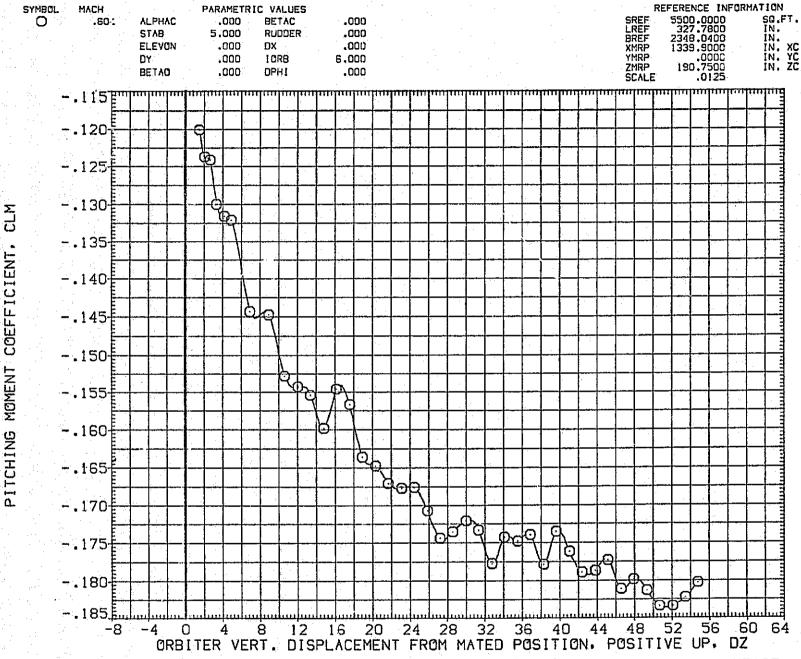


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE125)

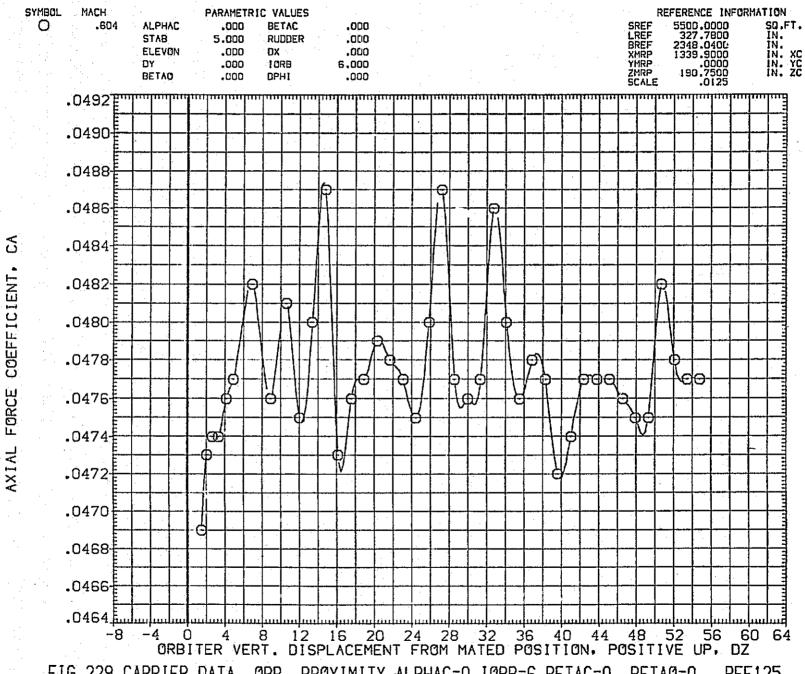


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE125)

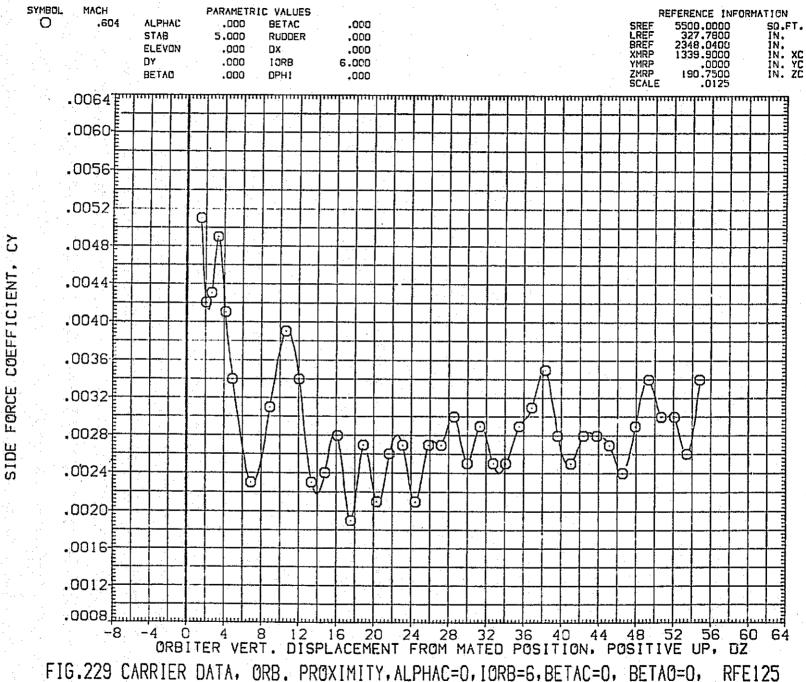


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE125)

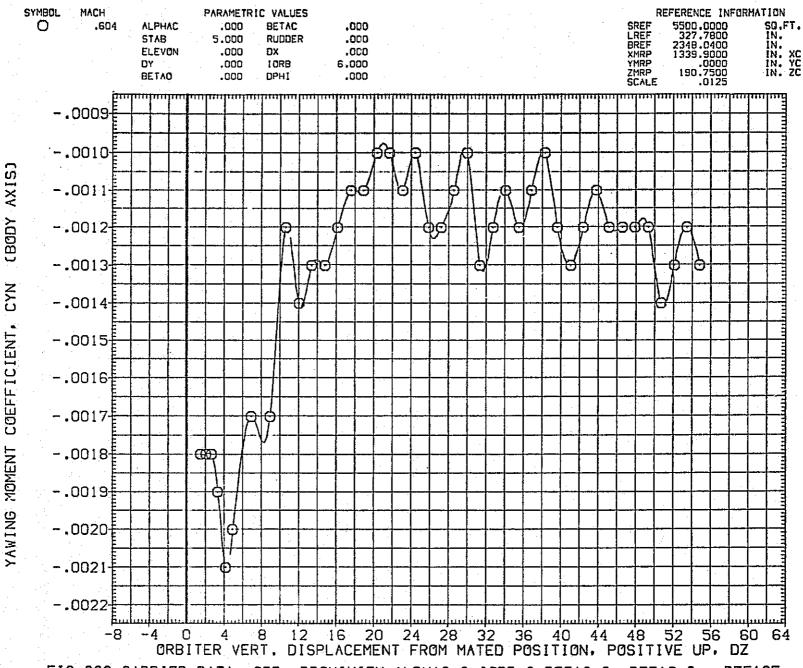


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE125)

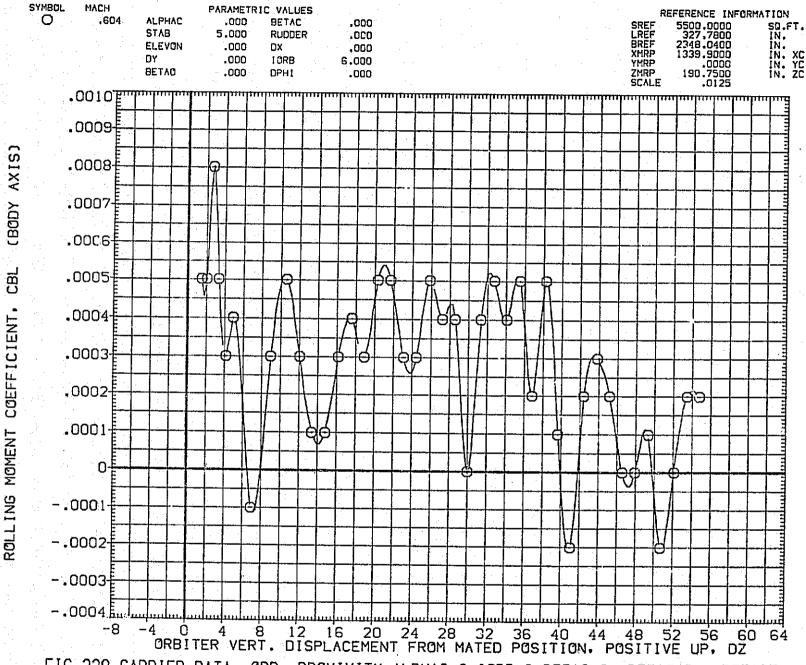


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

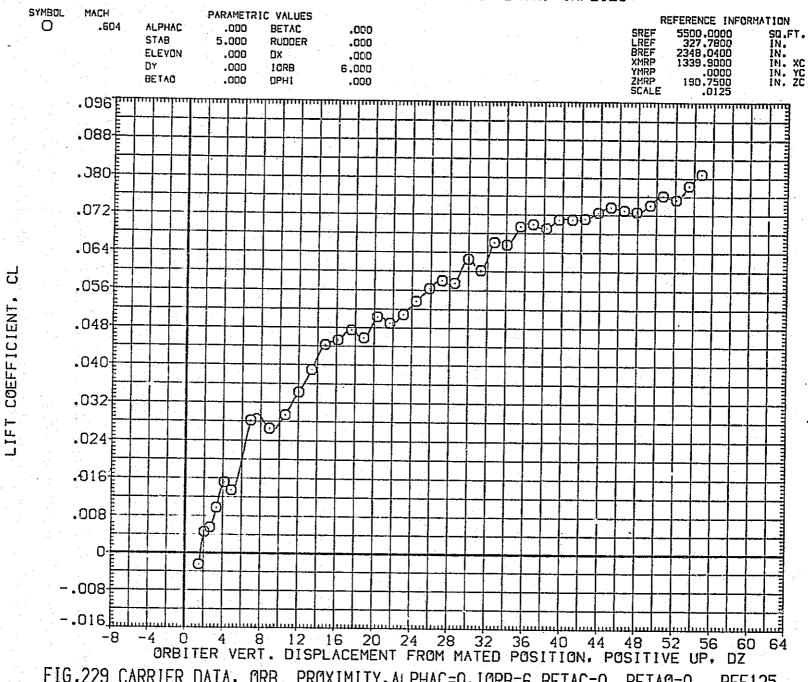


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE125)

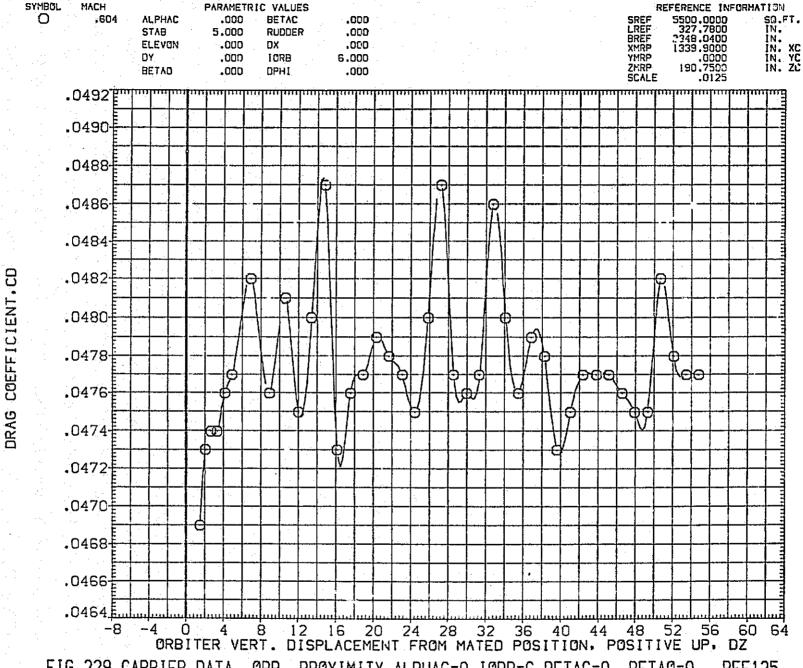


FIG.229 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=6, BETAC=0, BETAO=0, RFE125

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE126)

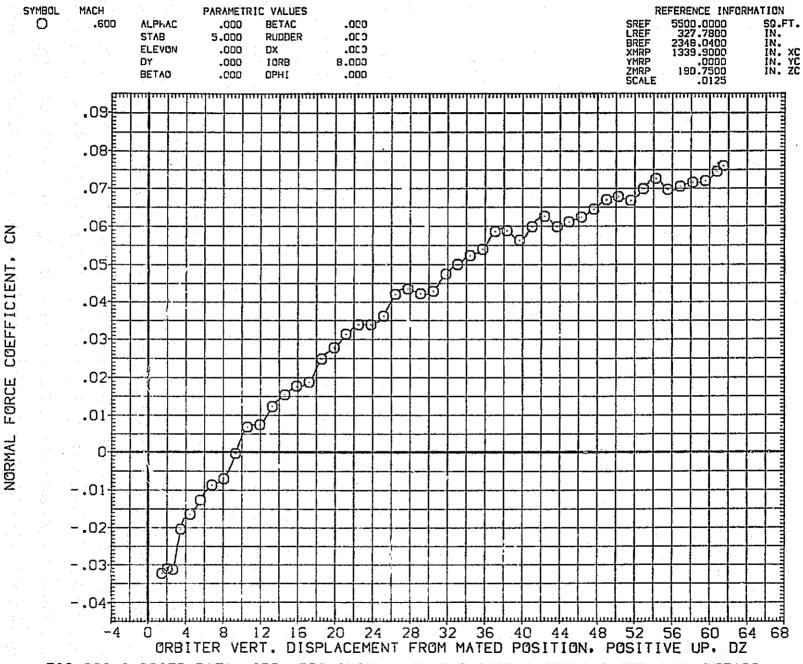


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE126)

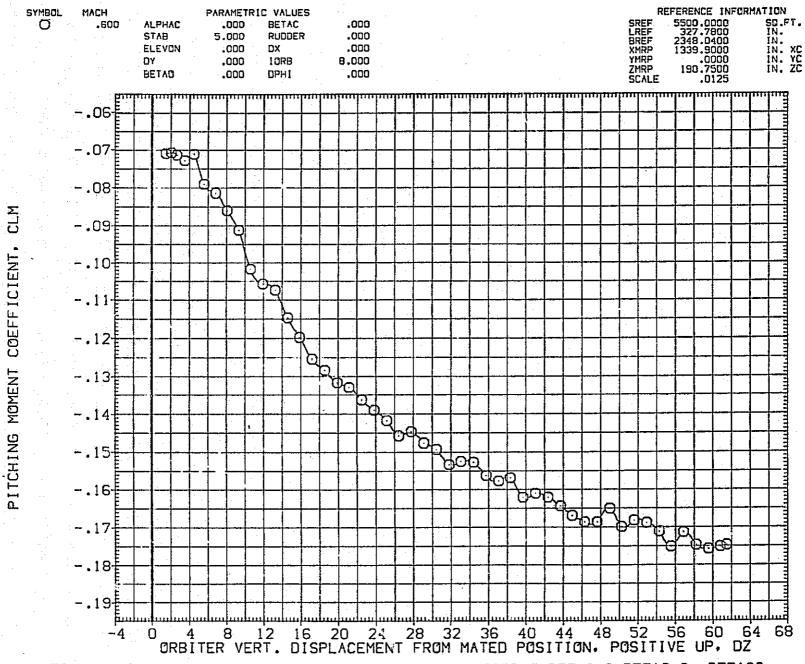


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE126)

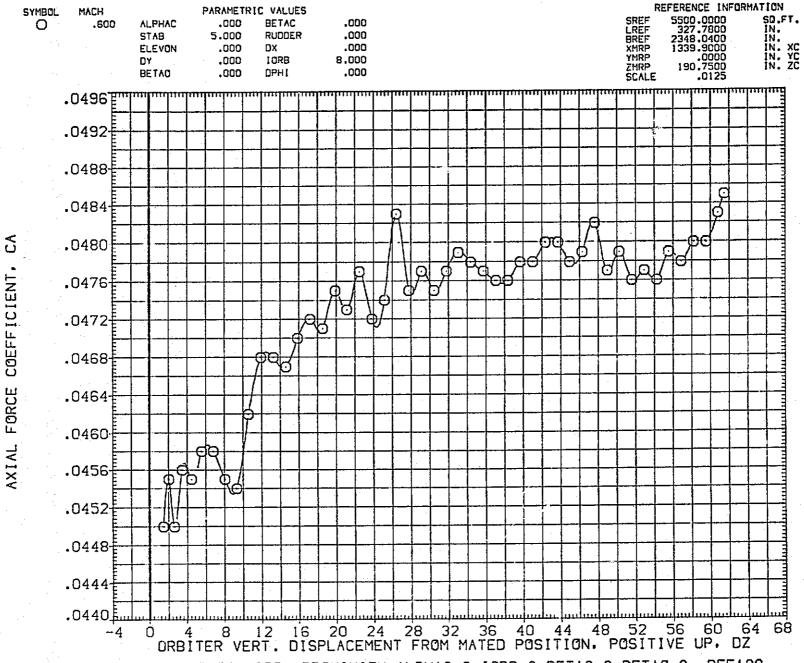


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126
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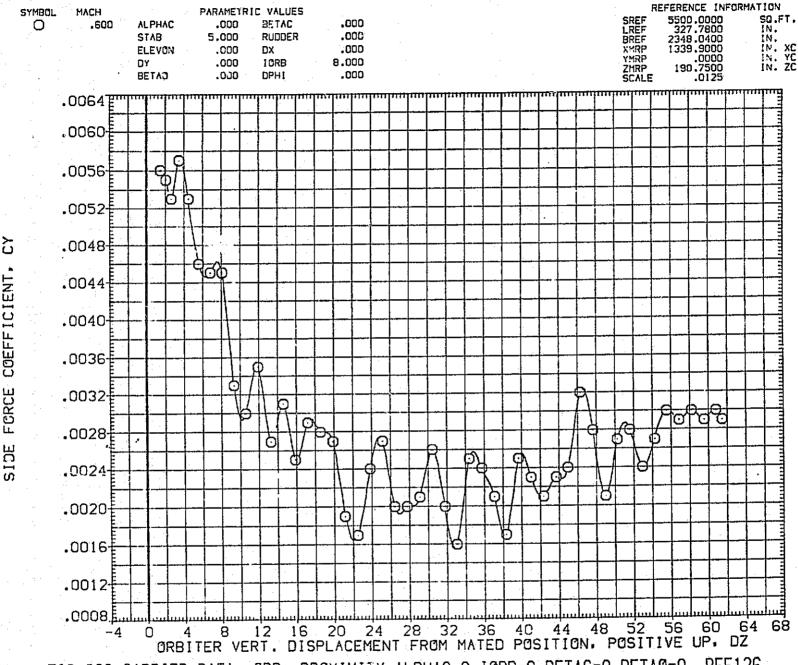
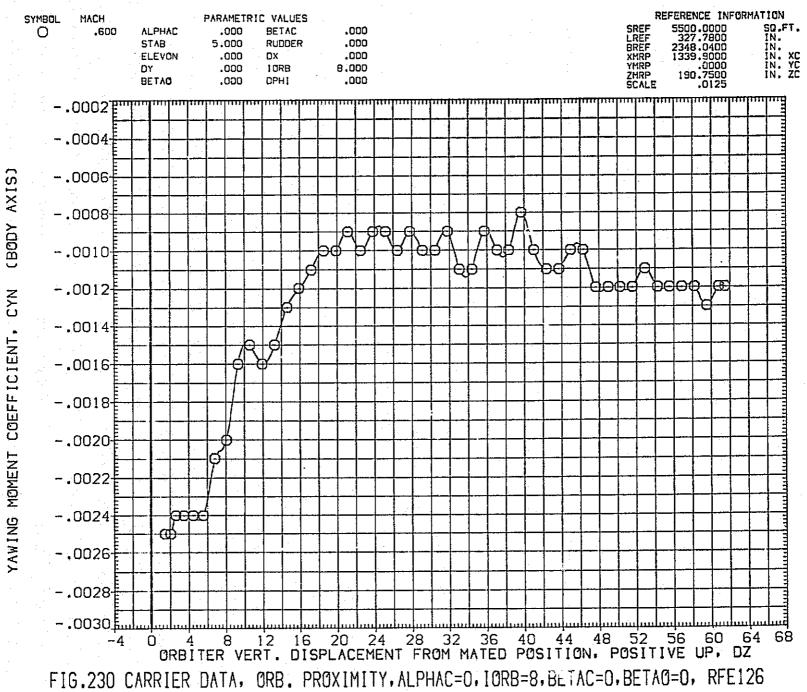


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE126)



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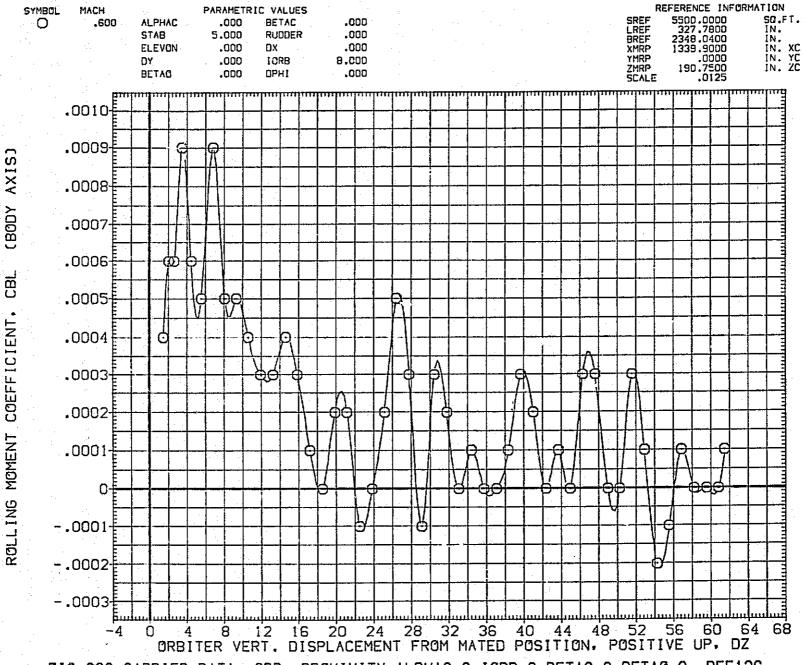


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126
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LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE126)

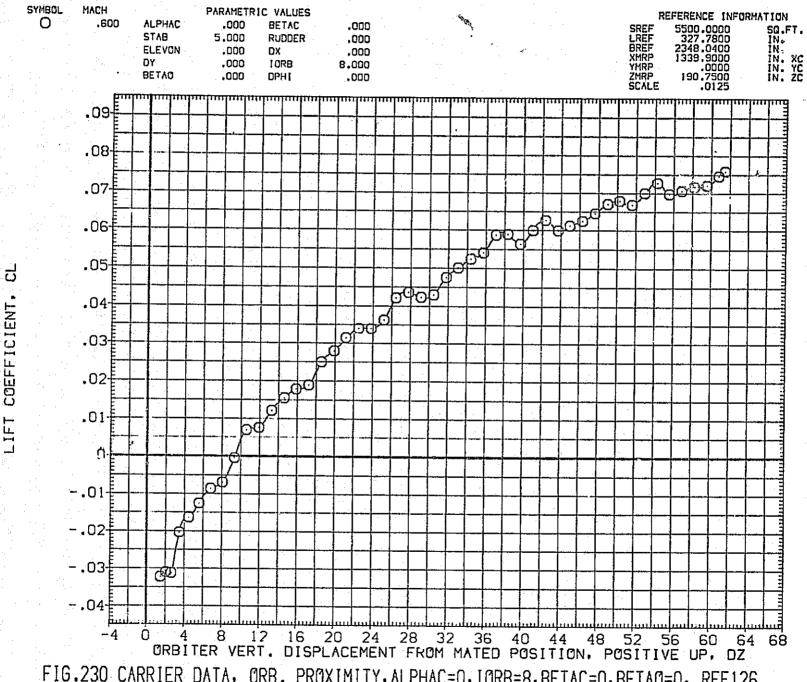


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE126)

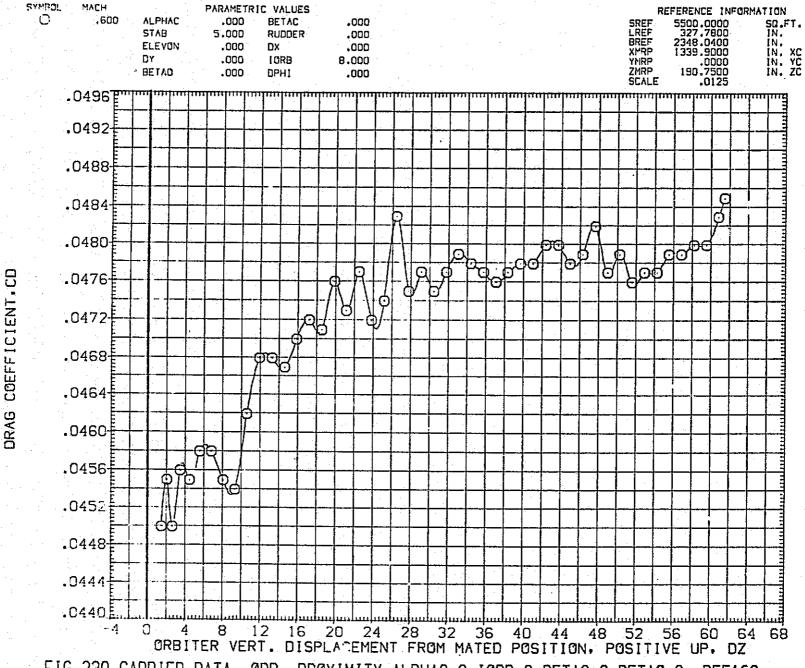
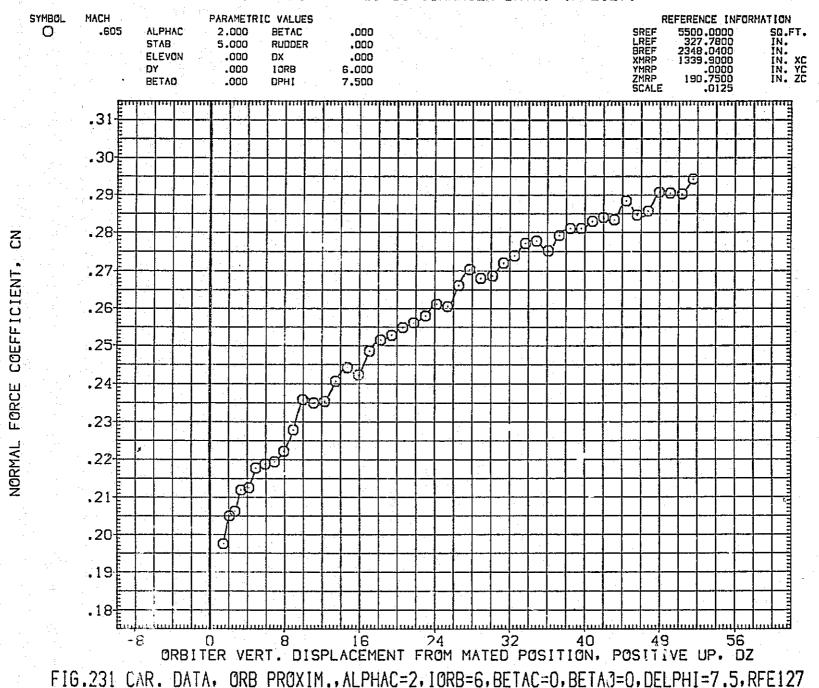


FIG.230 CARRIER DATA, ORB. PROXIMITY, ALPHAC=0, IORB=8, BETAC=0, BETAO=0, RFE126

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE127)



## LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE127)

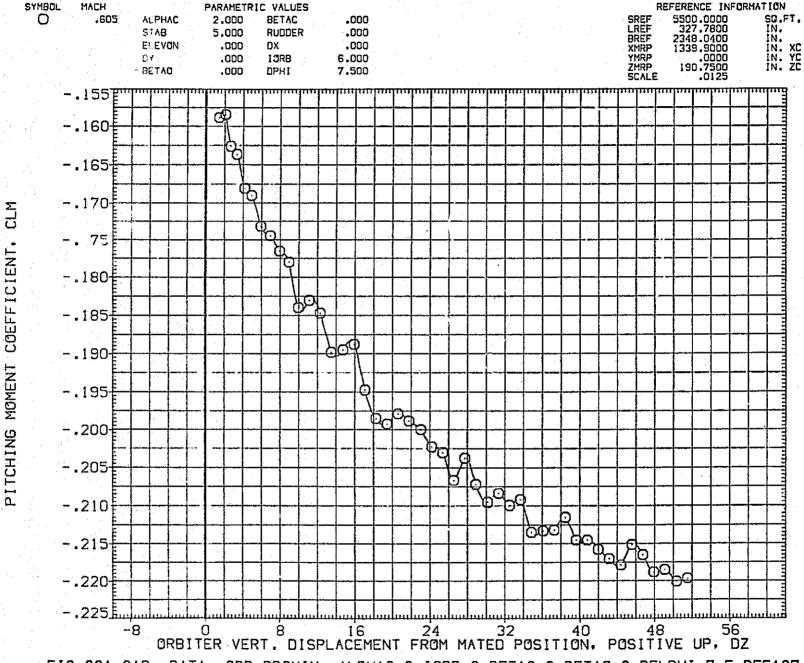


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE127)

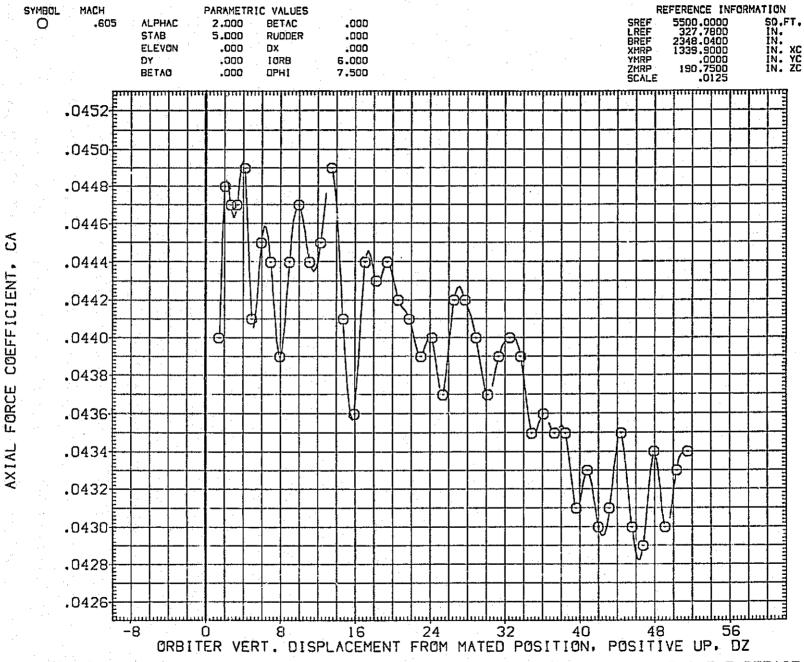


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE127)

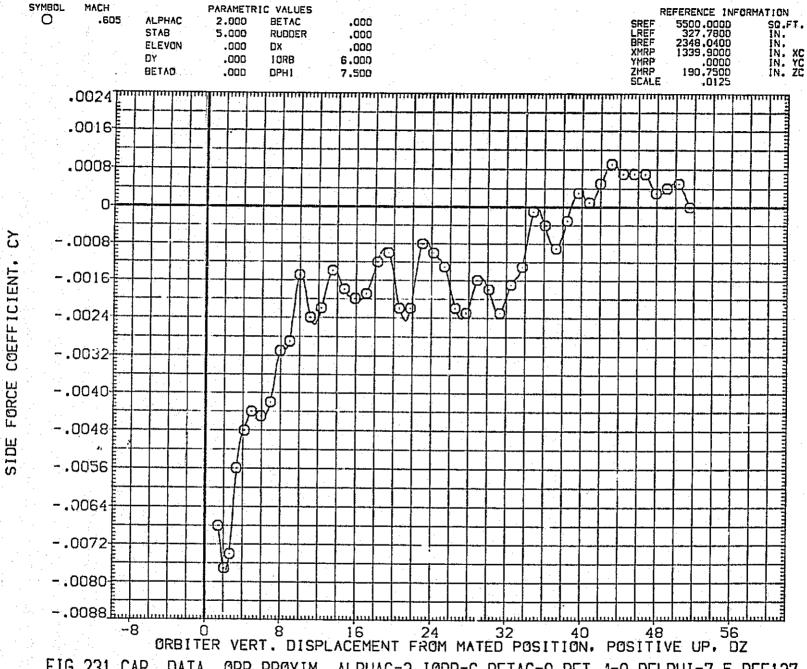


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BET J=0, DELPHI=7.5, RFE127

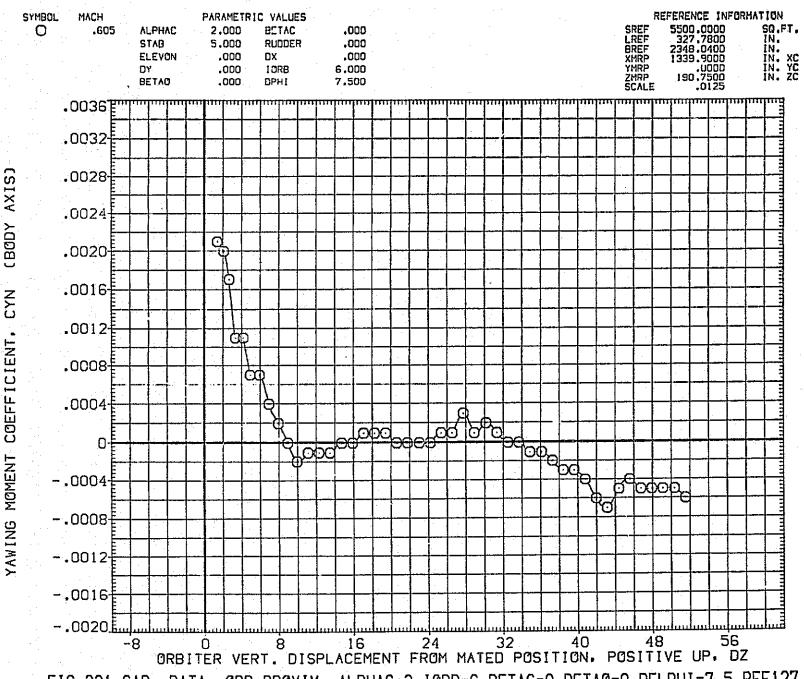


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127

LTV44-559(CA26) 747/1 ATY 06 S1 (CARRIER DATA) (RFE127)

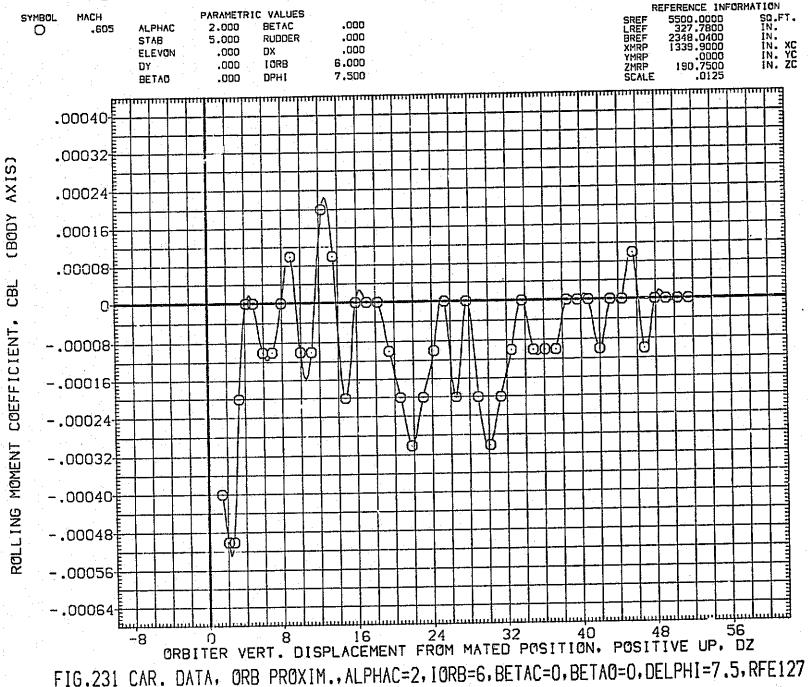


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127 PAGE 1822

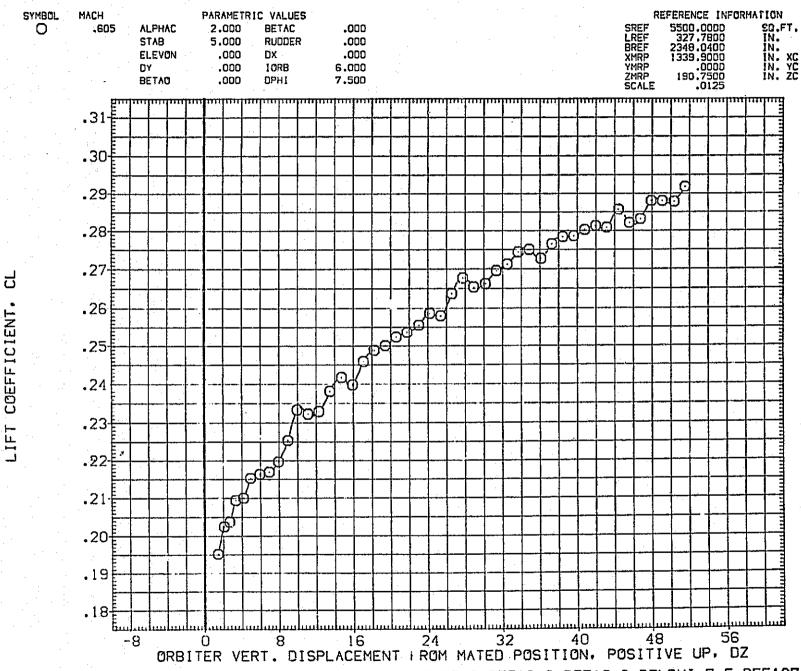


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127
PAGE 1823

LTV44-559(CA26) 747/1 ATY 06 SI (CARRIER DATA) (RFE127)

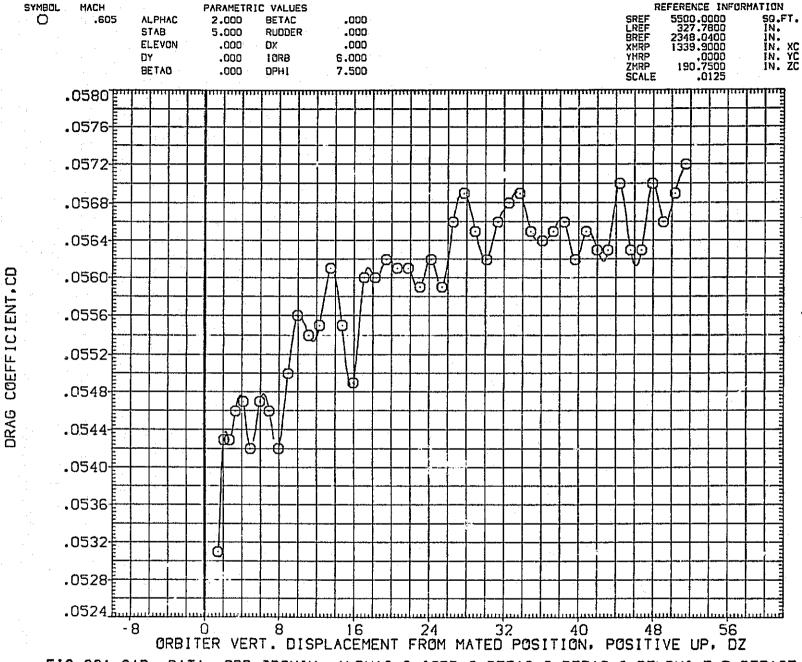


FIG.231 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE127

..

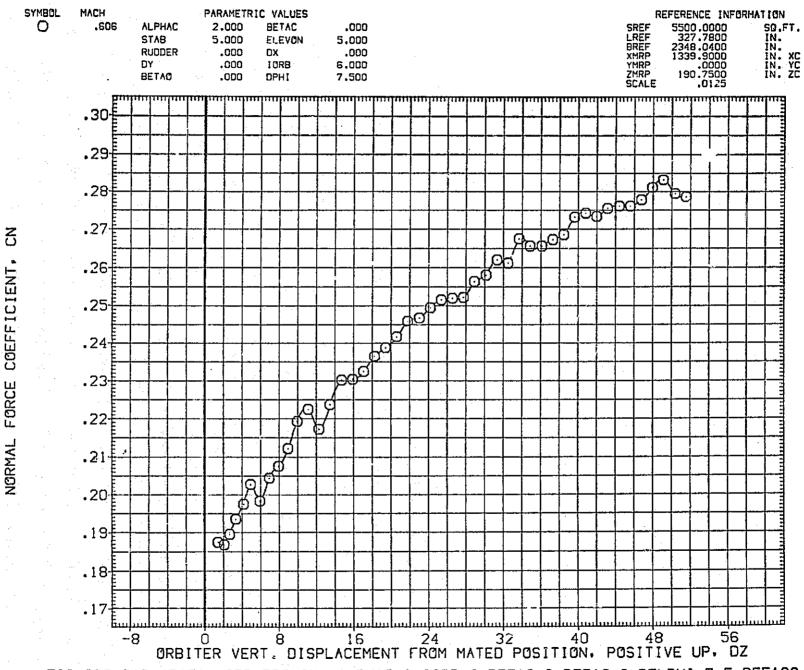


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

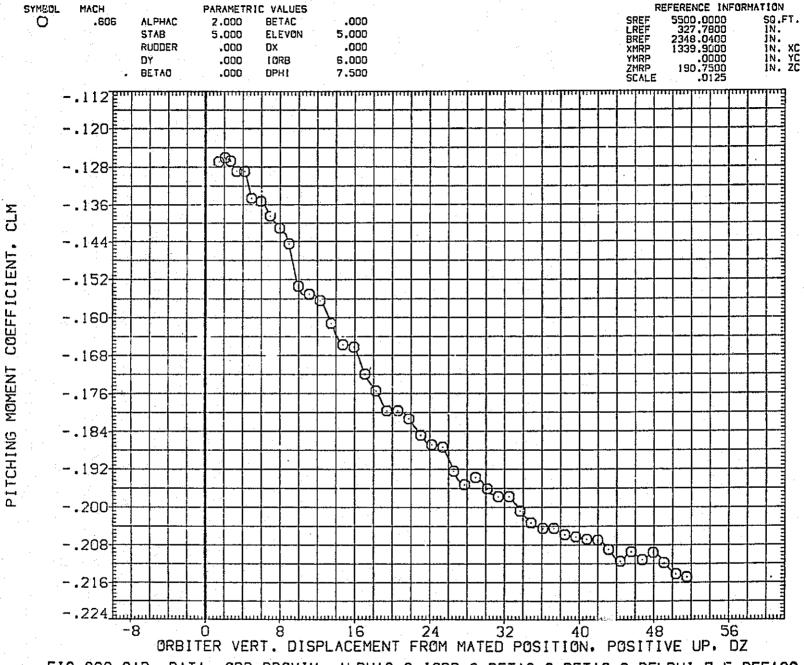


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE128)

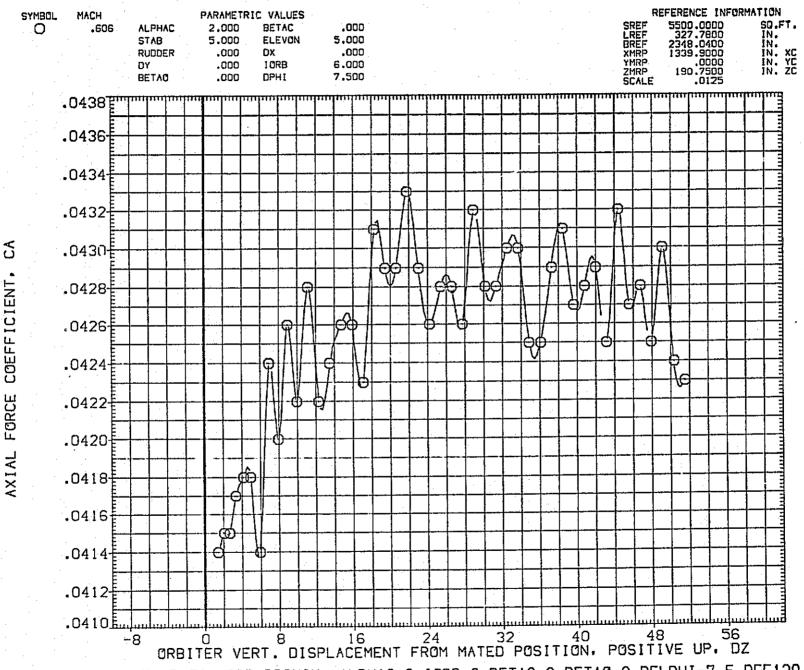


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE128)

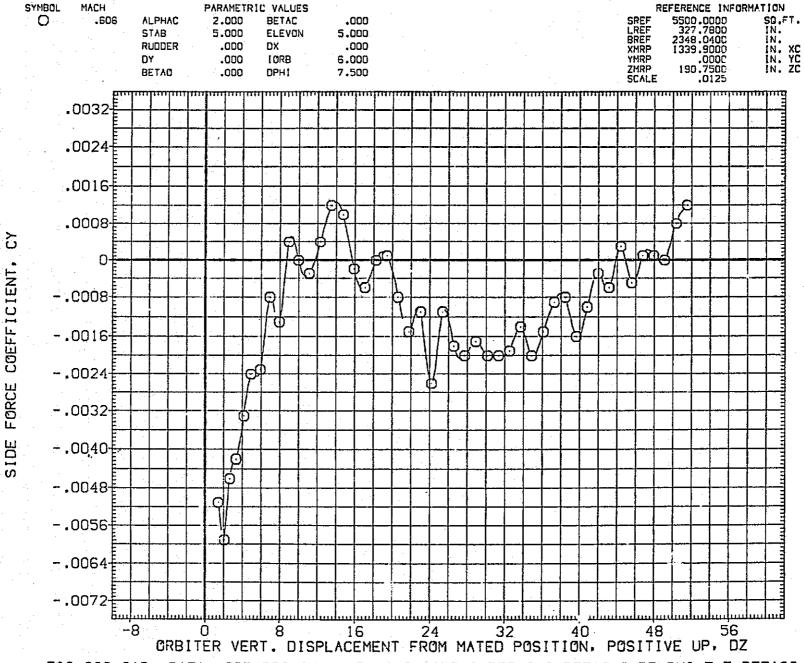


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

## LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE128)

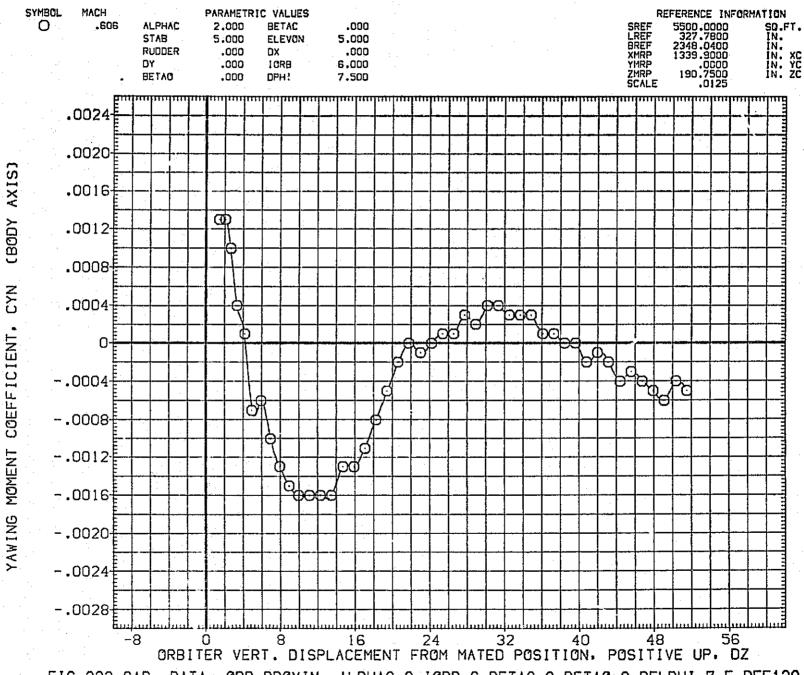


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

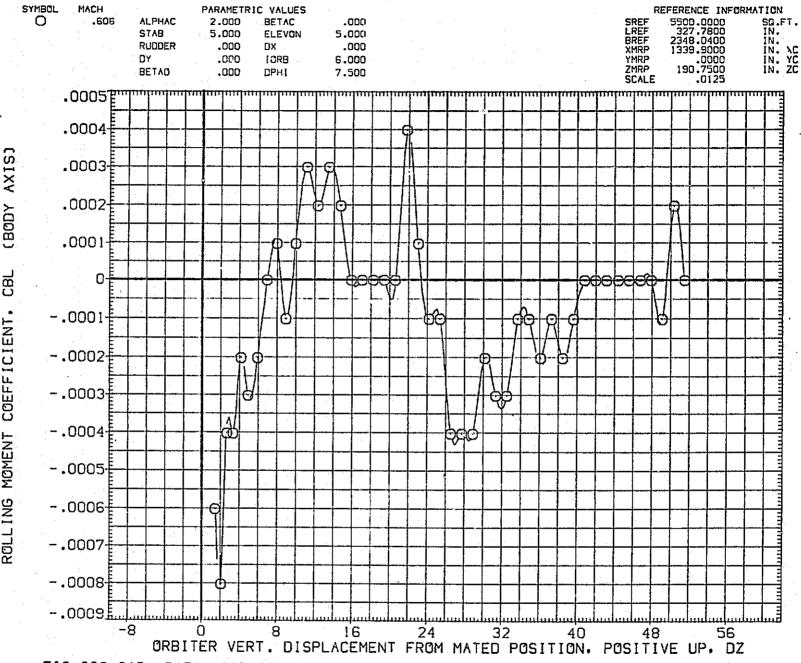


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE128)

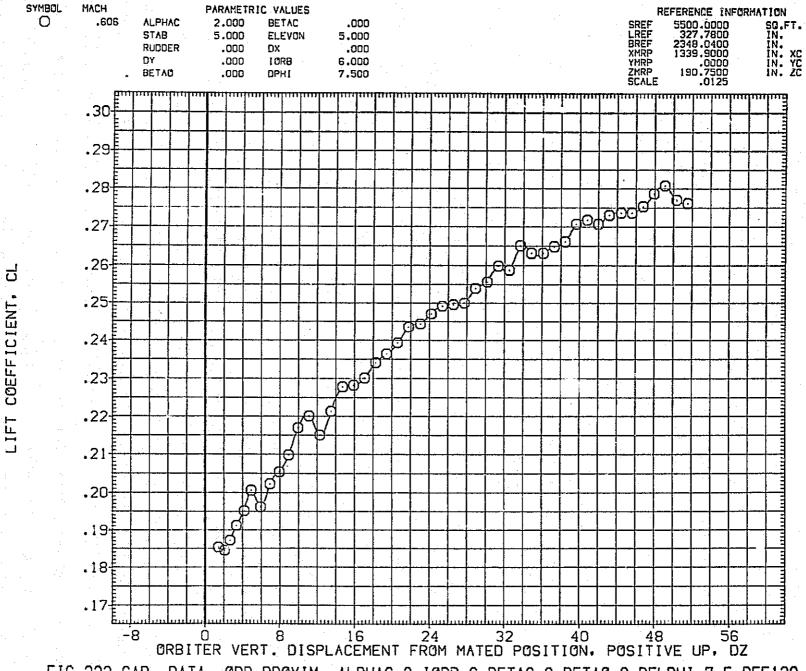


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE128)

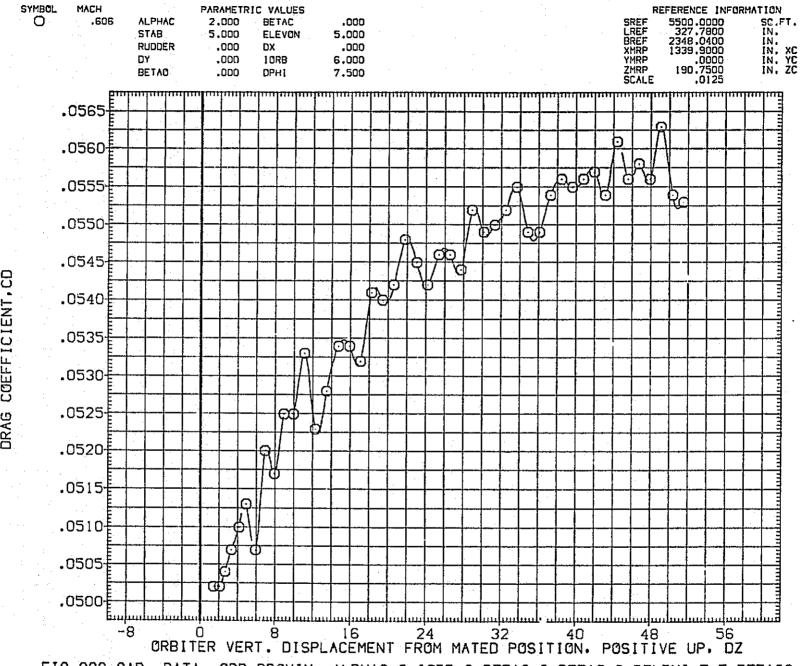


FIG.232 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=0, DELPHI=7.5, RFE128
PAGE 1832

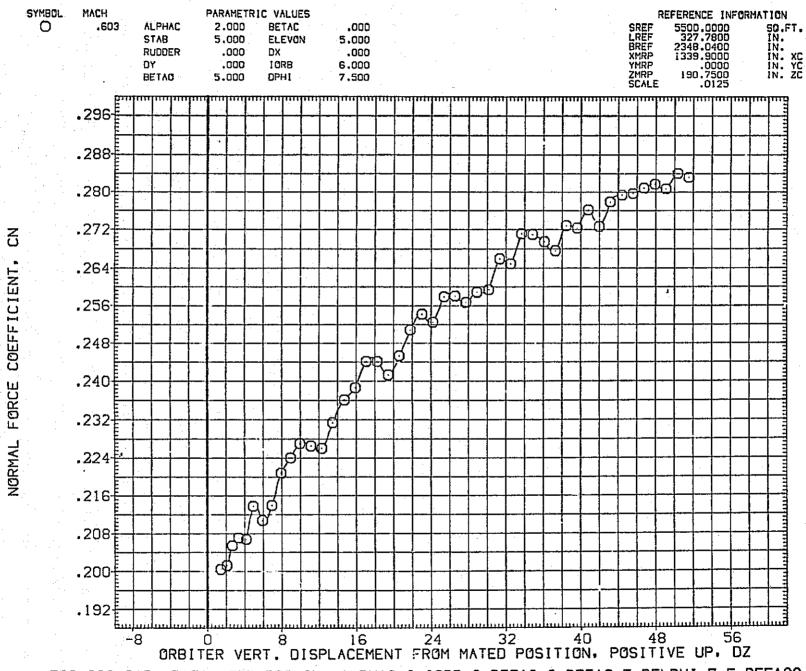


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129

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LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE129)

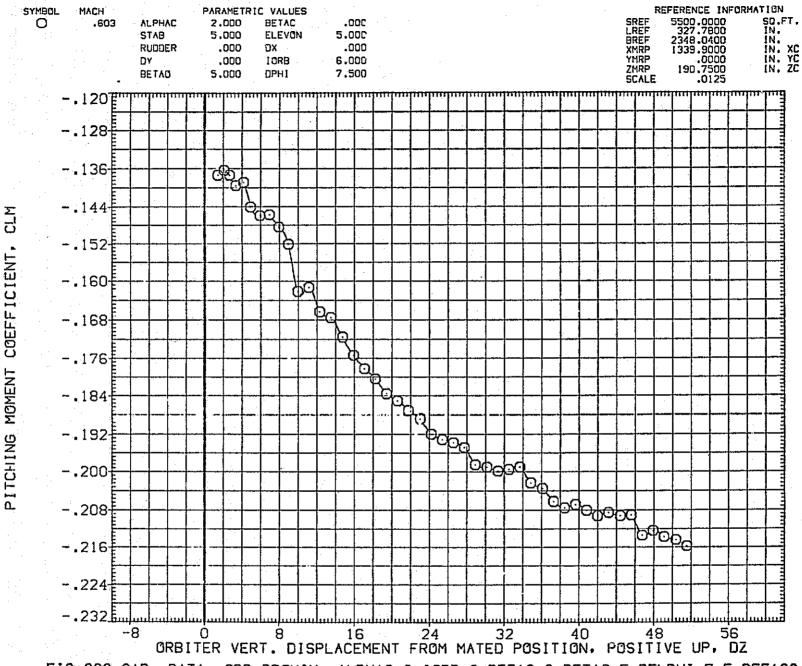


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129
PAGE 1834

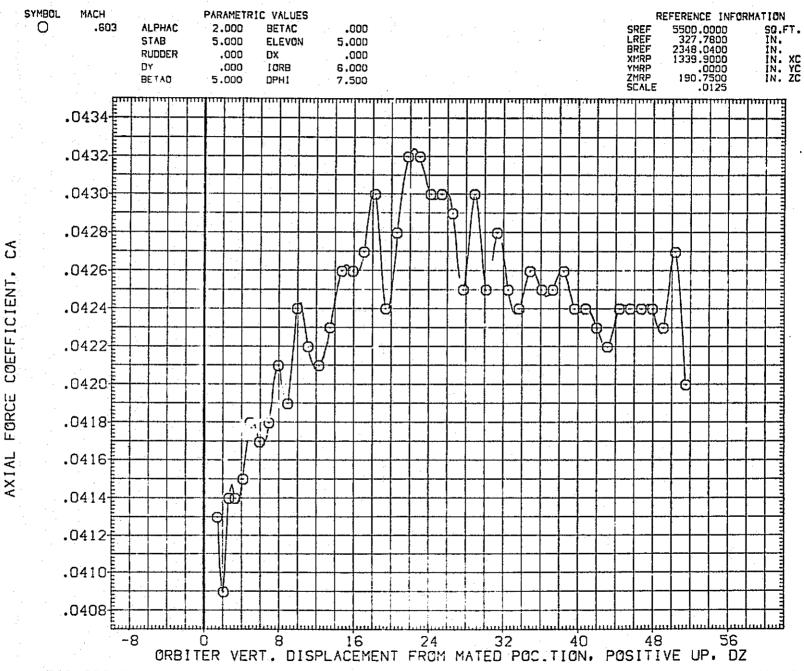


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129
PAGE 1835

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE129)

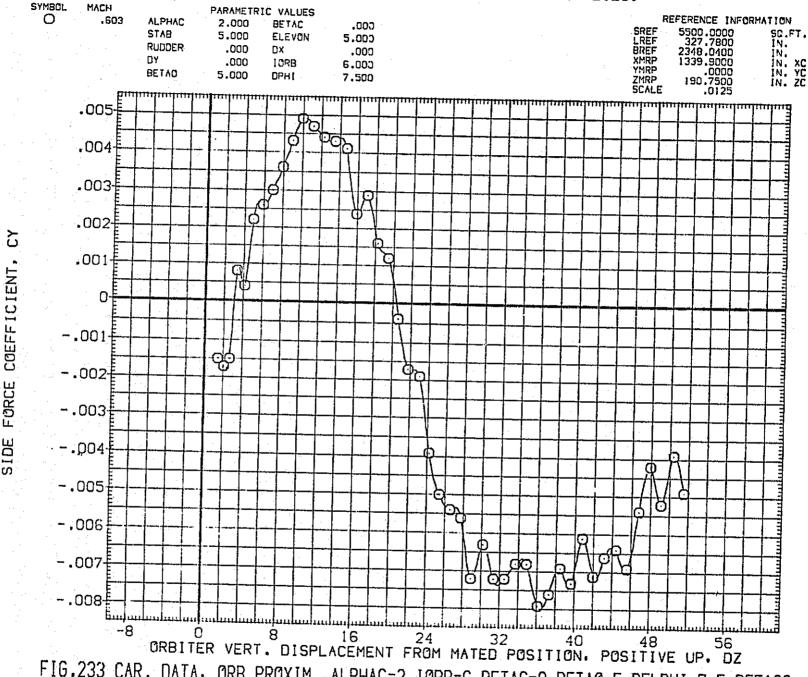


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2.10RB=6.BETAC=0.BETAO=5.DELPHI=7.5, RFE129

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE129)

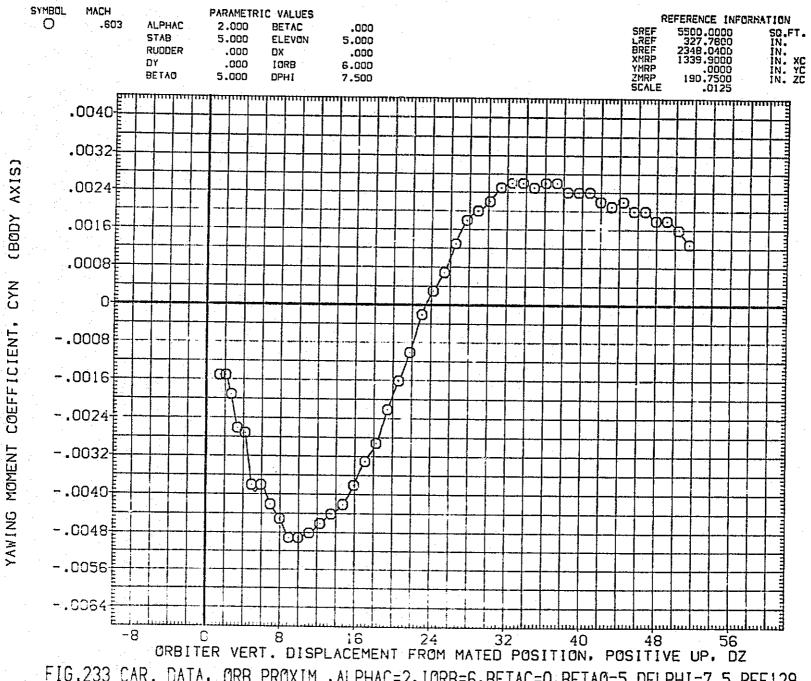


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129

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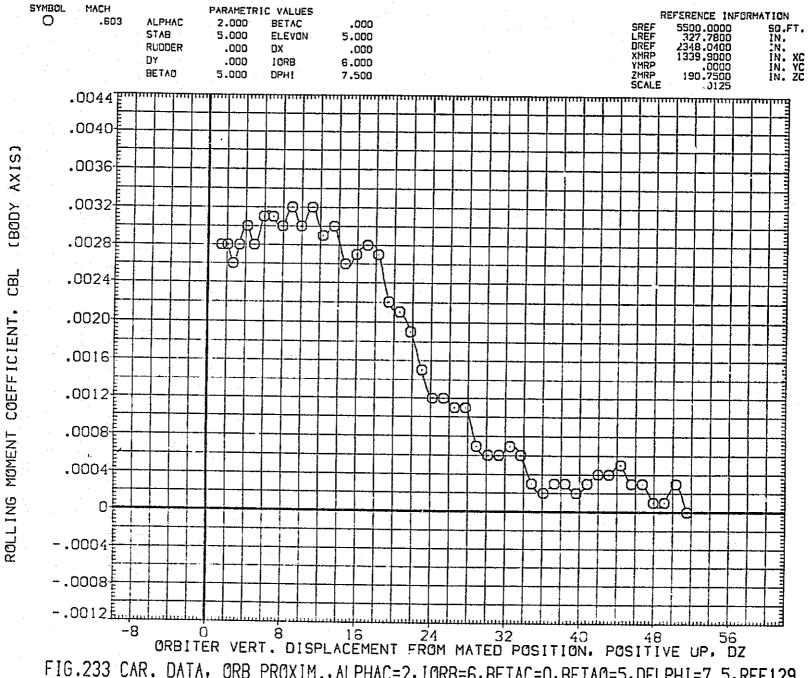


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129

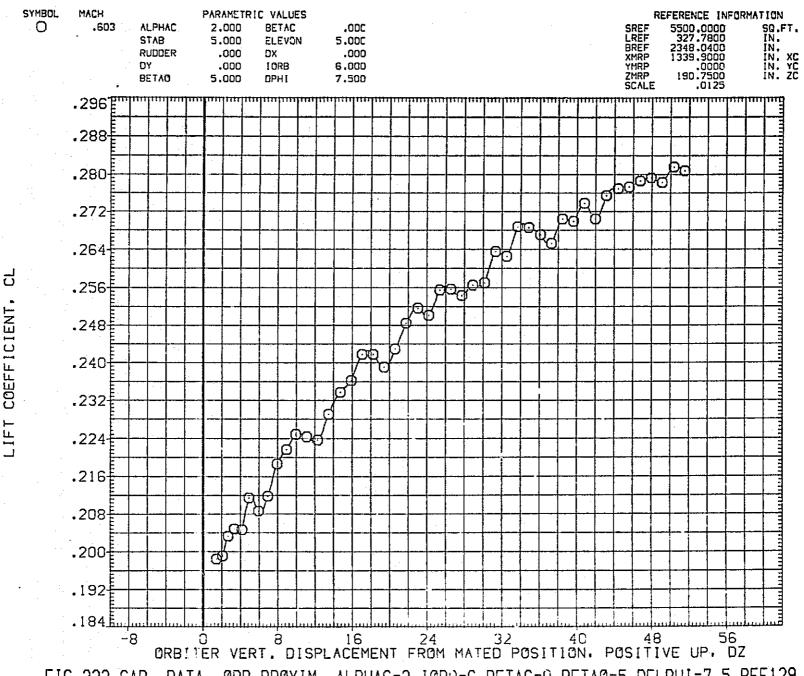


FIG.233 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129

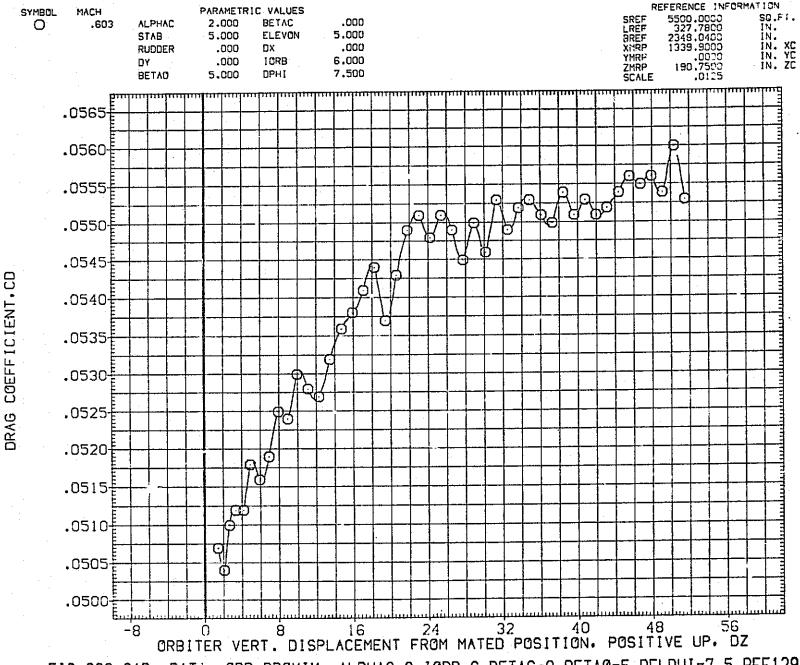


FIG. 233 CAR. DATA, ORC PROXIM., ALPHAC=2, IORB=6, BETAC=0, BETAO=5, DELPHI=7.5, RFE129

LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE130)

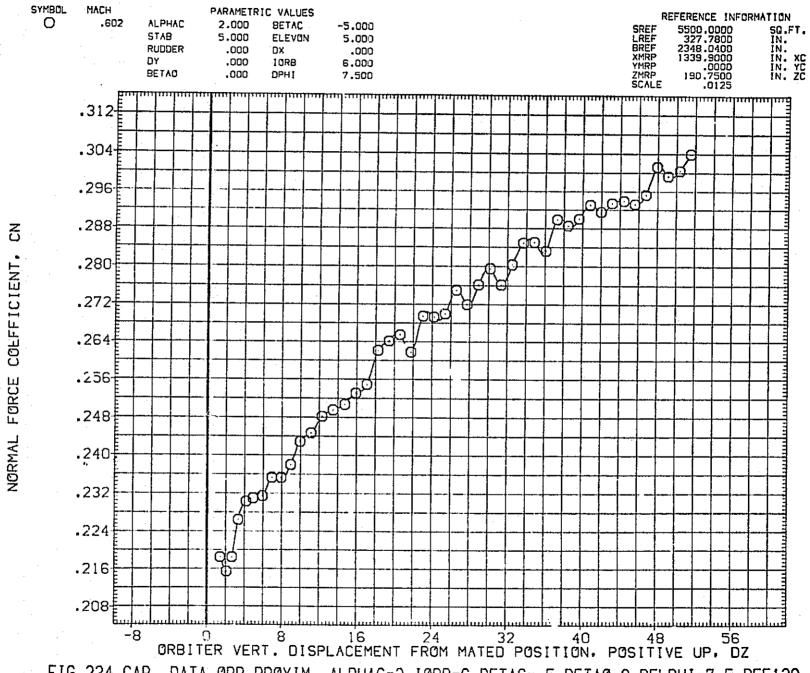


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

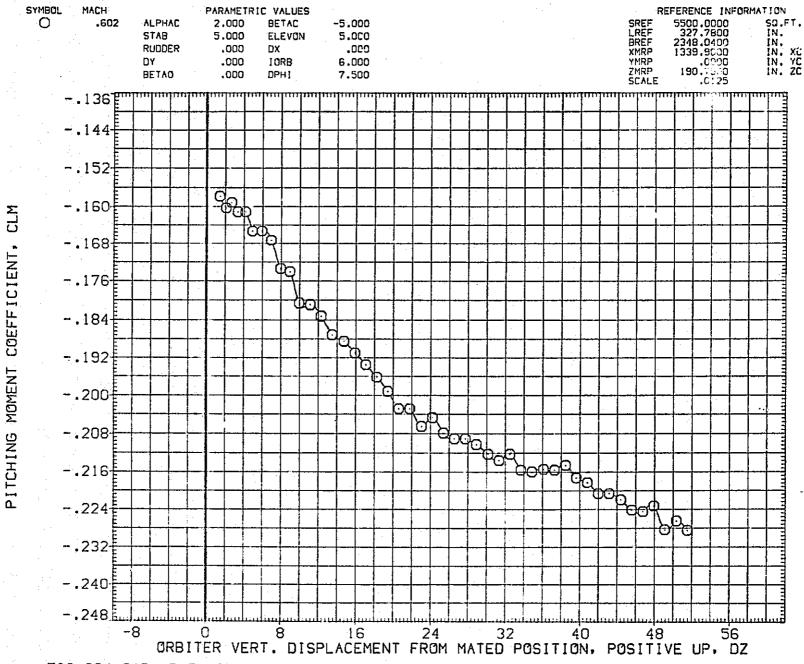


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE130)

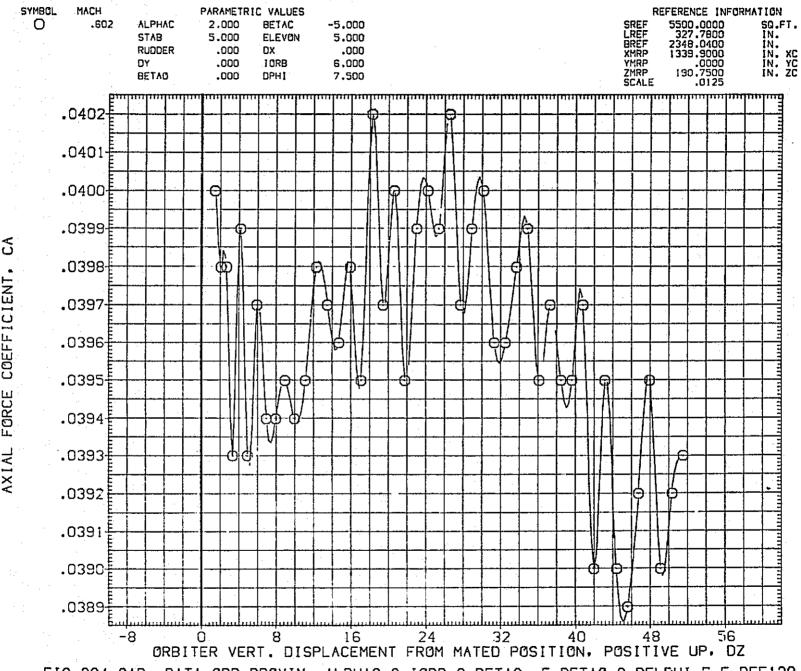


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

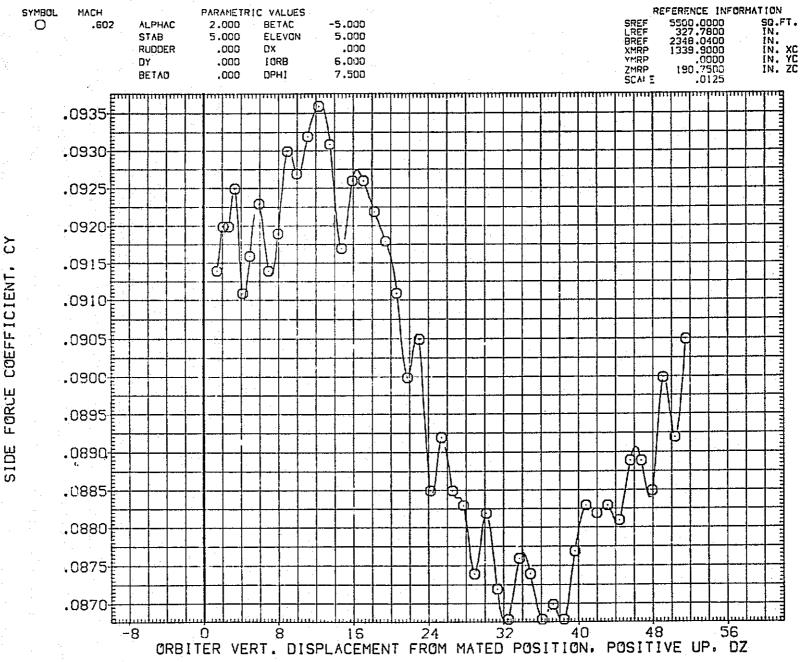


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

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## LTV44-559(CA26) 747/1 ATY 02 SI (CARRIER DATA) (RFE130)

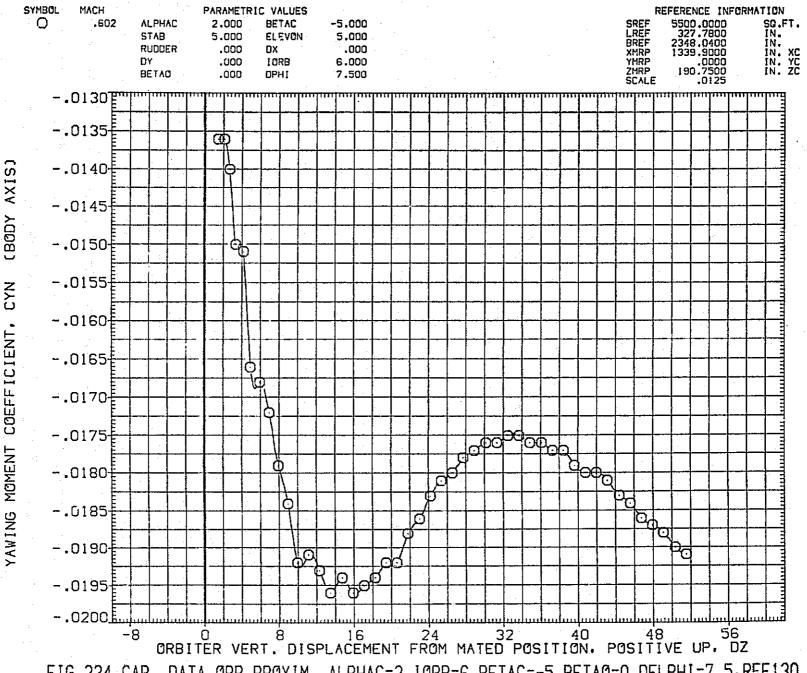


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE130)

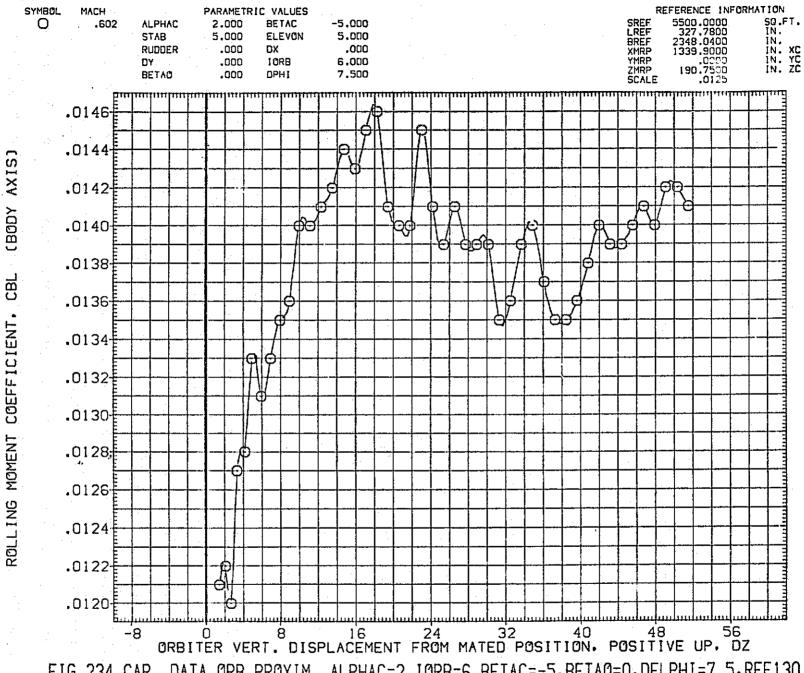


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

LTV44-559(CA26) 747/1 ATY 02 S1 (CARRIER DATA) (RFE130)

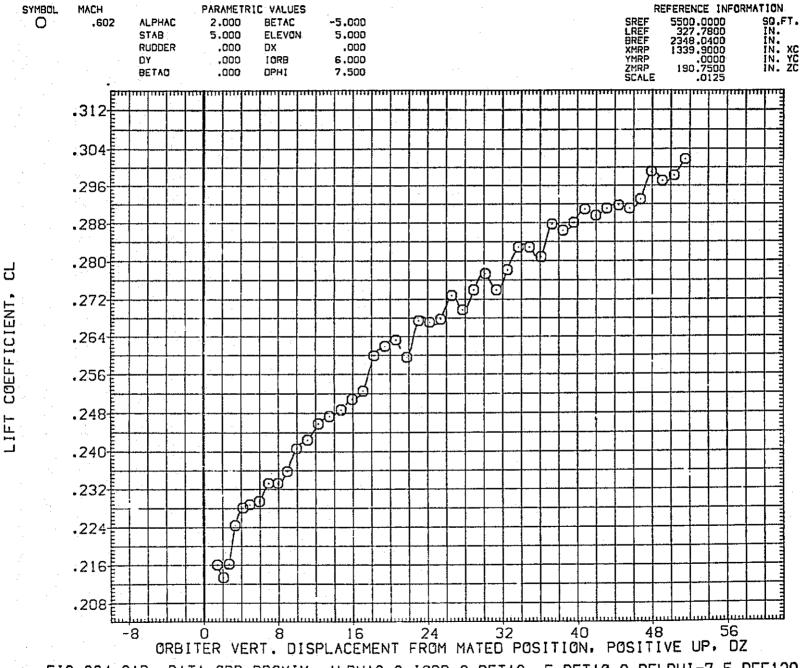


FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130

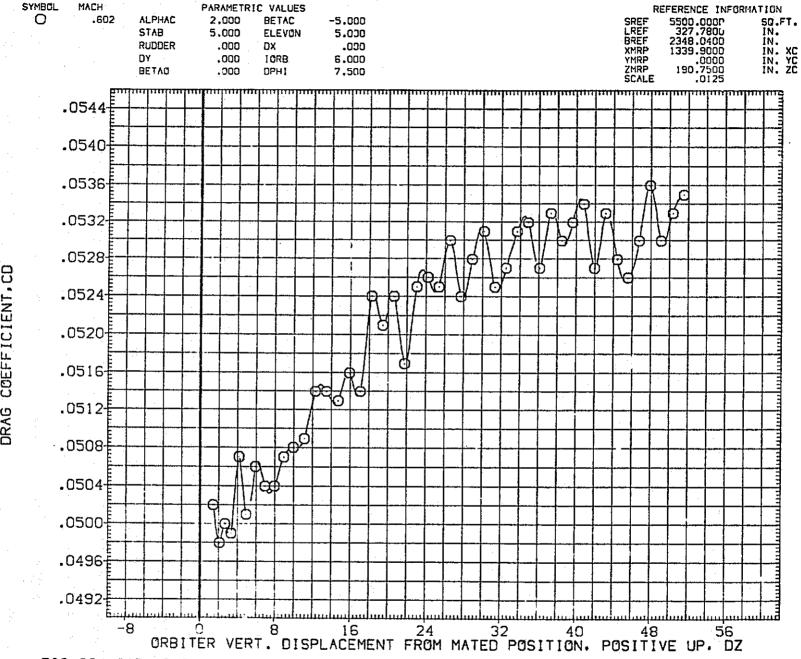
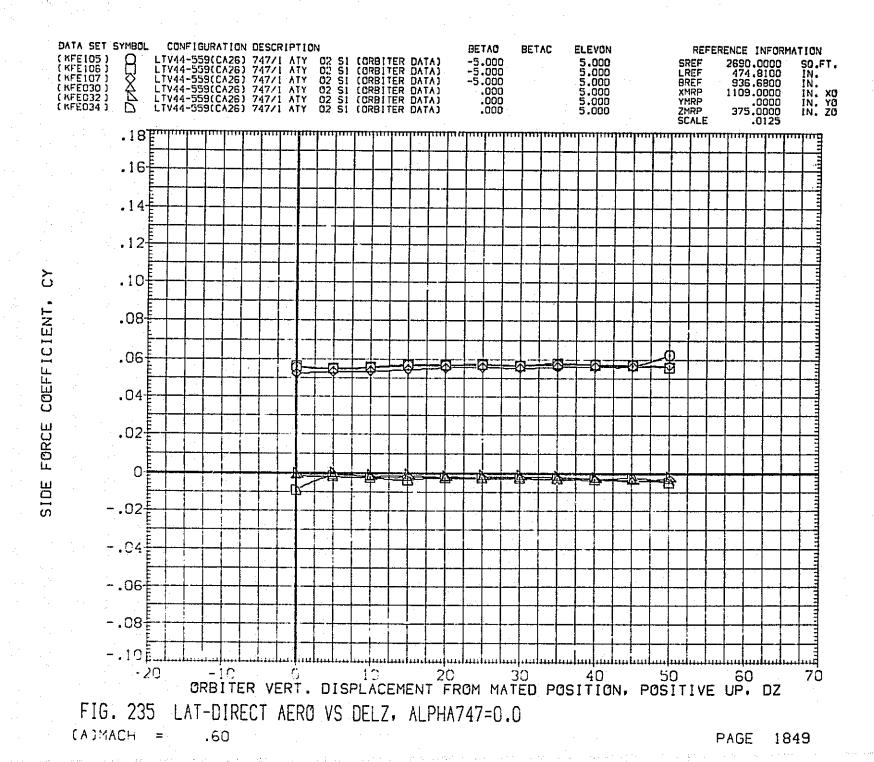
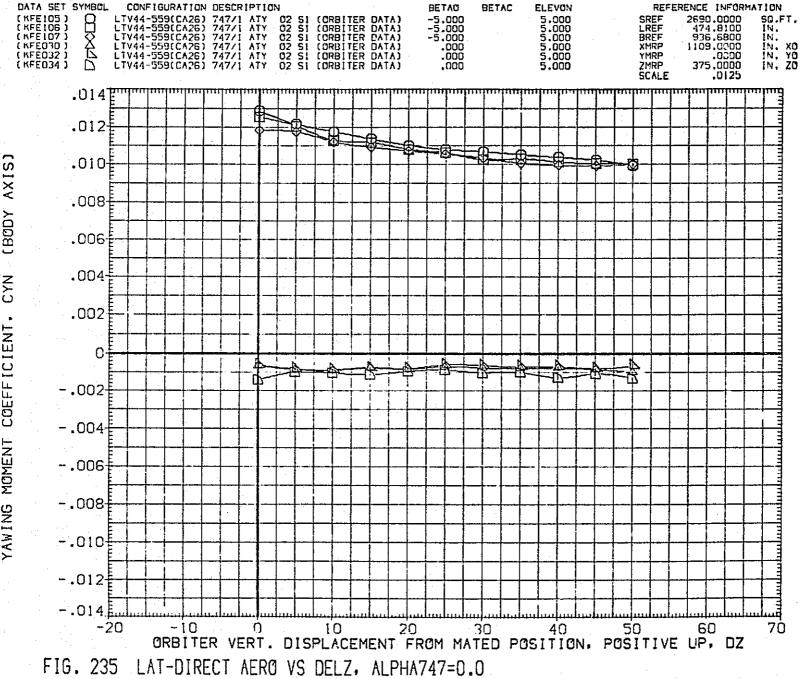


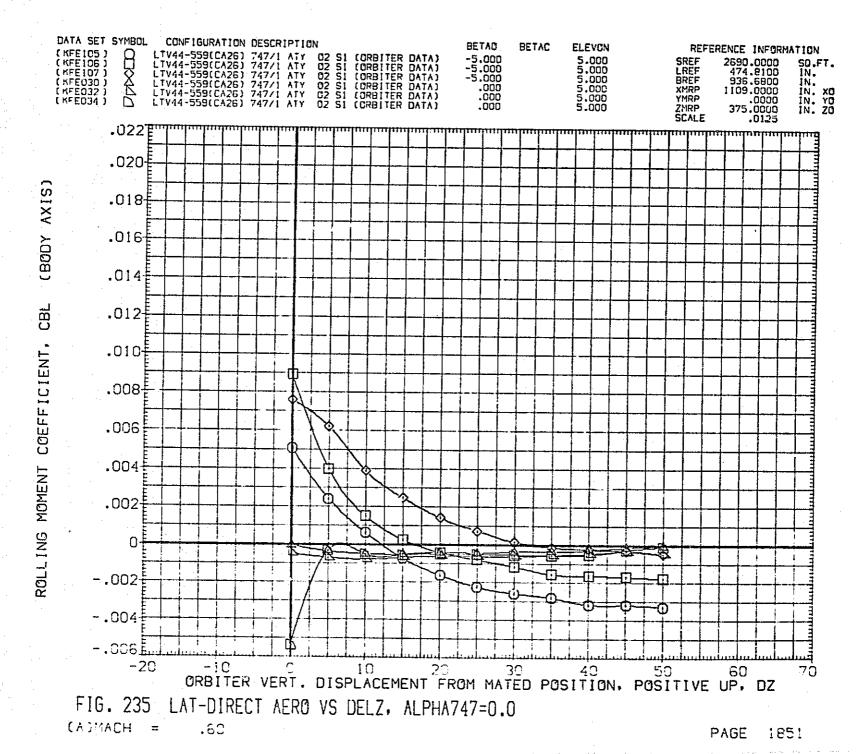
FIG.234 CAR. DATA, ORB PROXIM., ALPHAC=2, IORB=6, BETAC=-5, BETAO=0, DELPHI=7.5, RFE130 PAGE 1848





(A)MACH .60





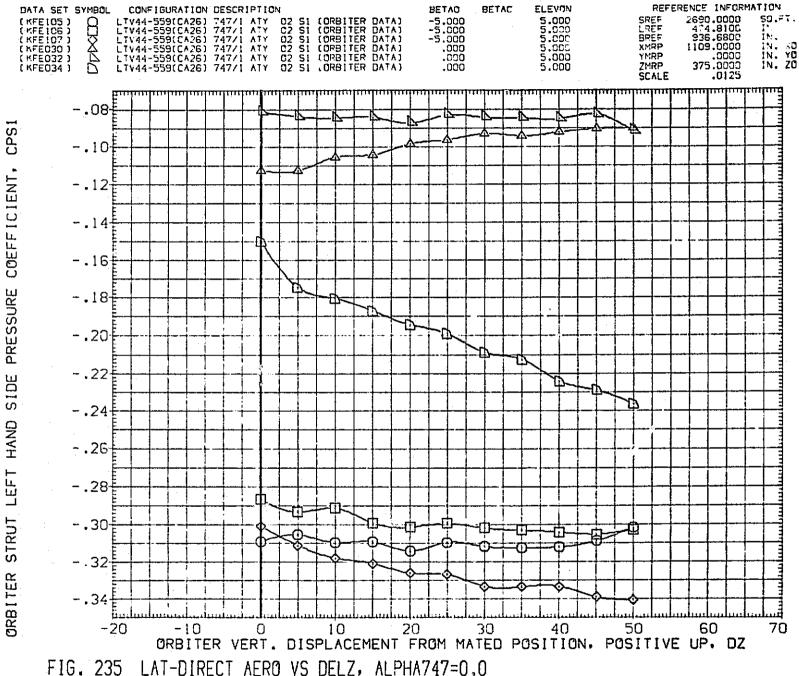


FIG. 235 LAT-DIRECT AERO VS DELZ, ALPHA747=0.0

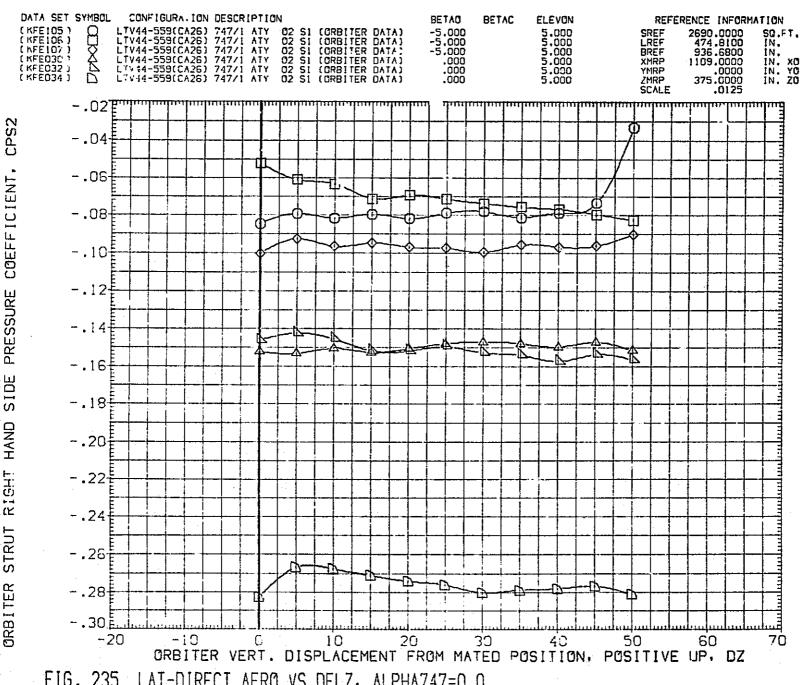
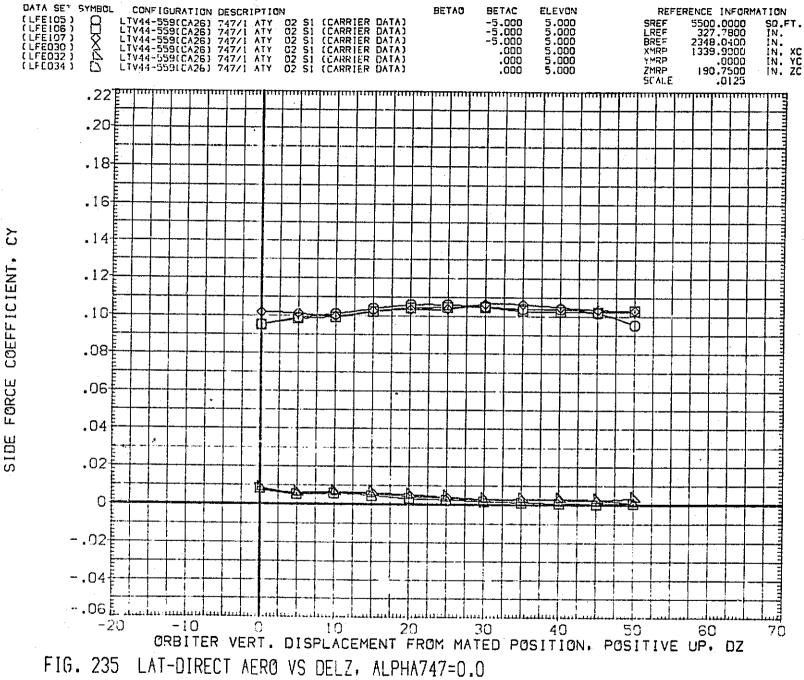
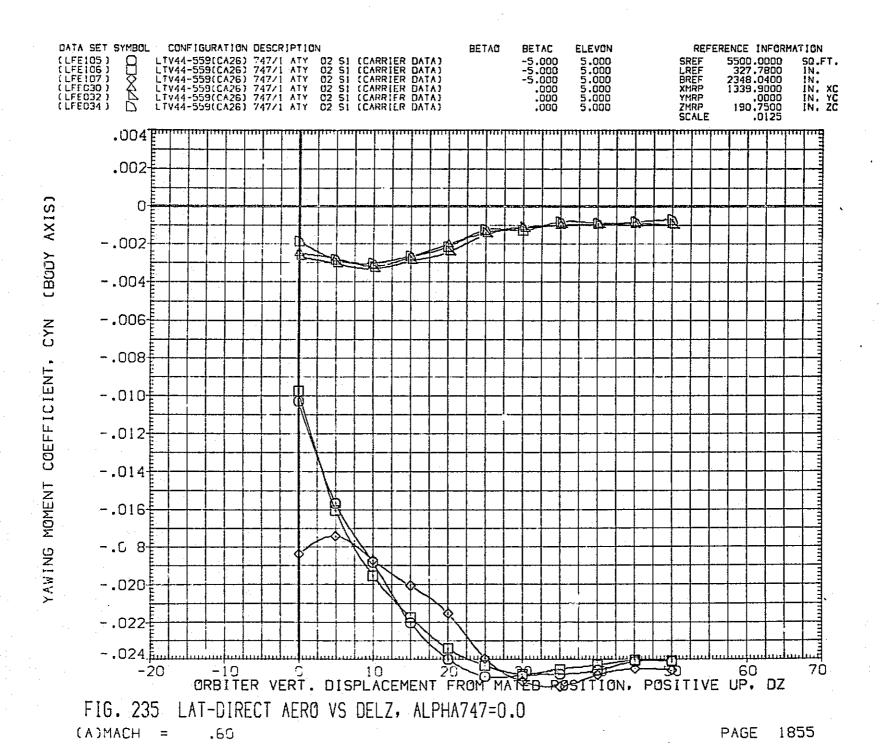


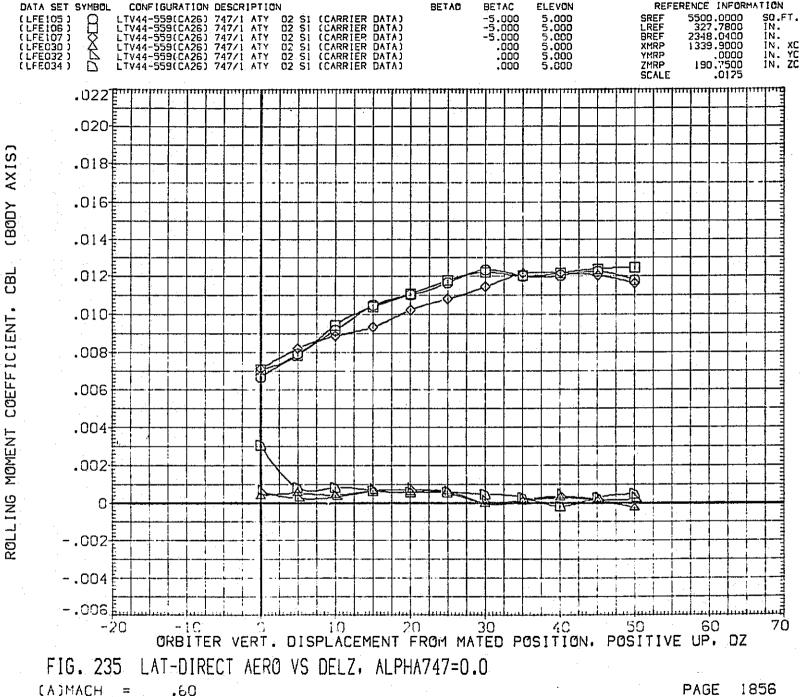
FIG. 235 LAT-DIRECT AERO VS DELZ, ALPHA747=0.0

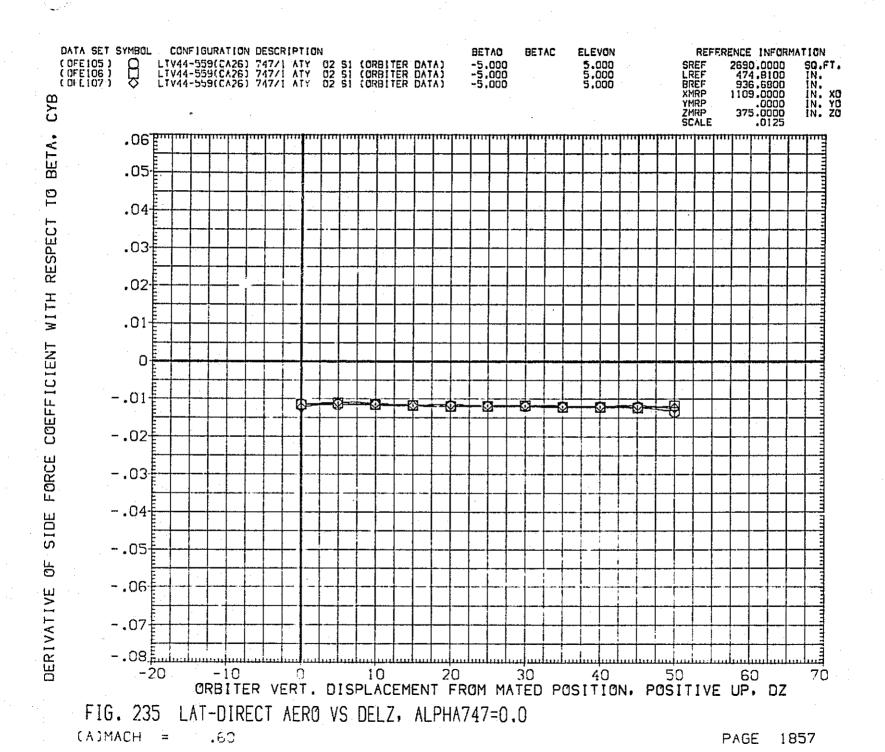


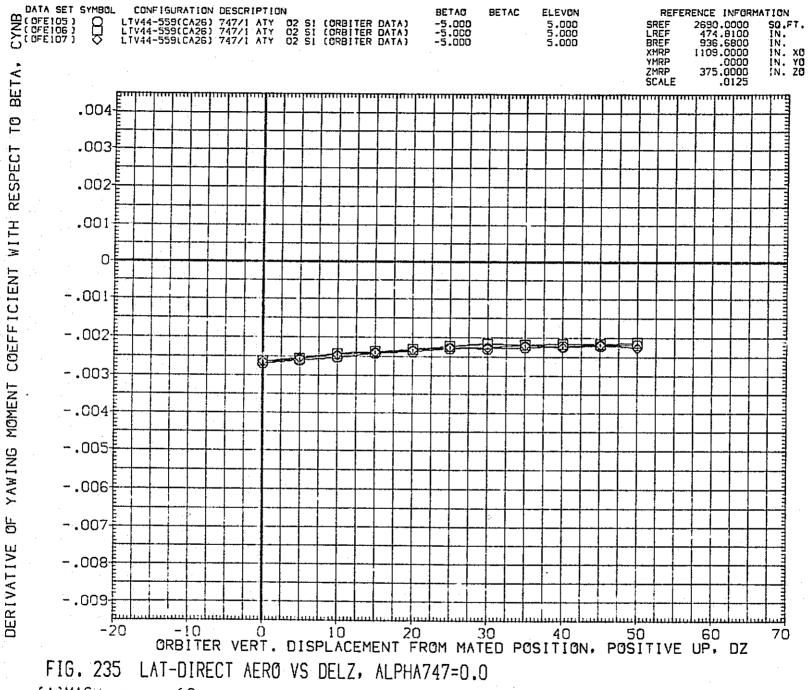
(A)MACH =.60

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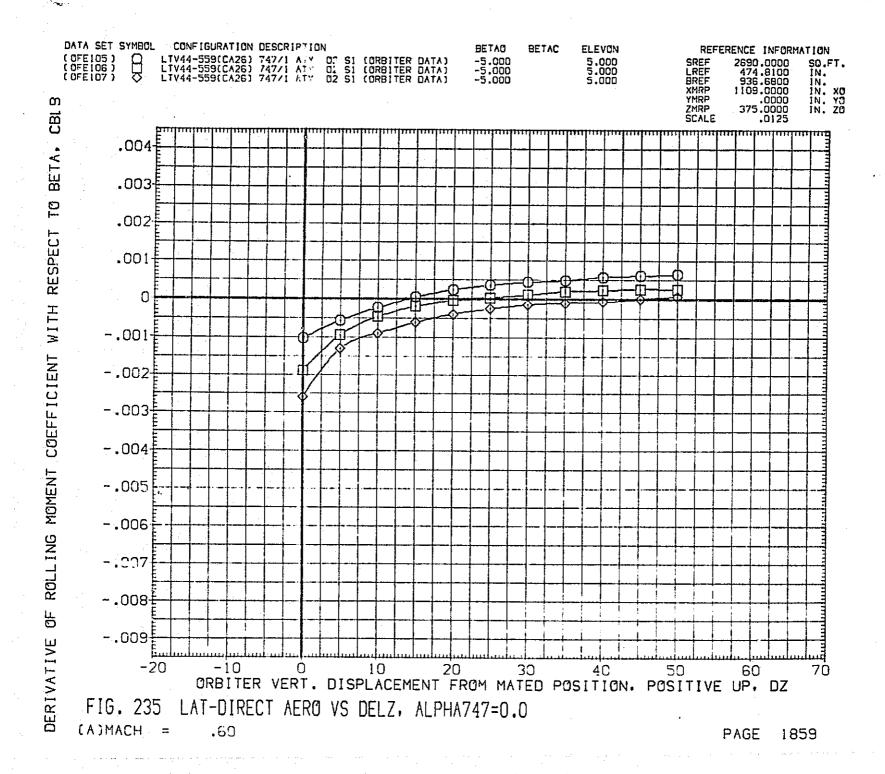


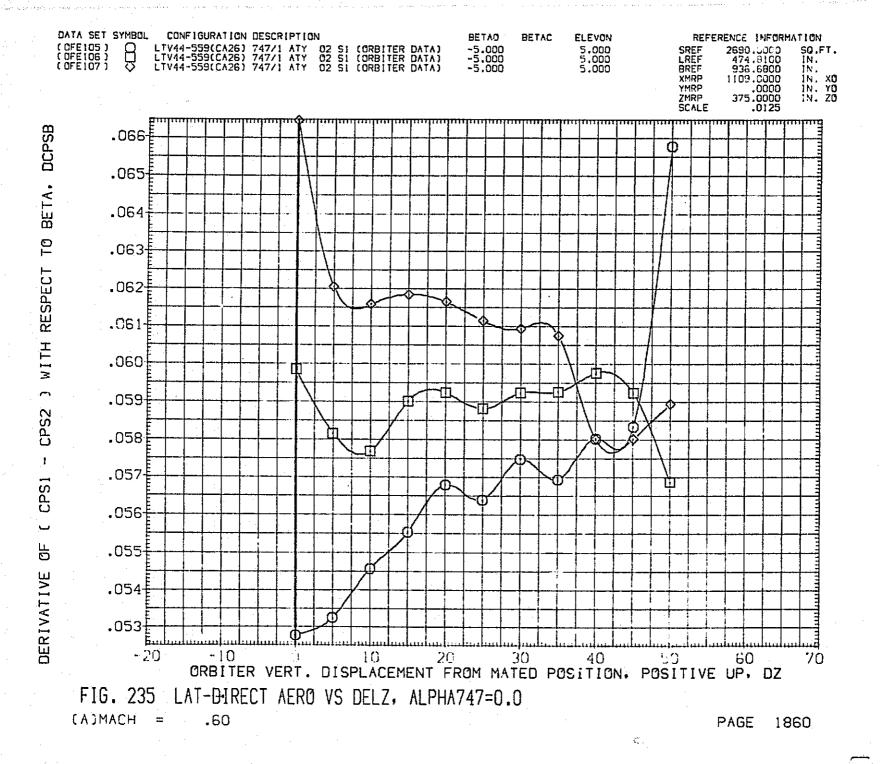


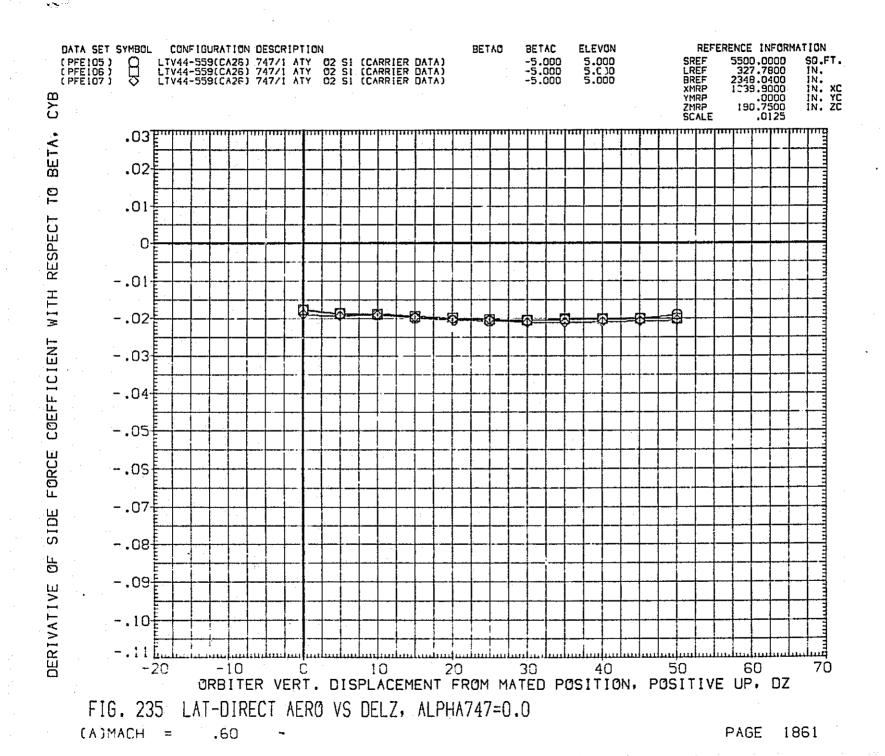


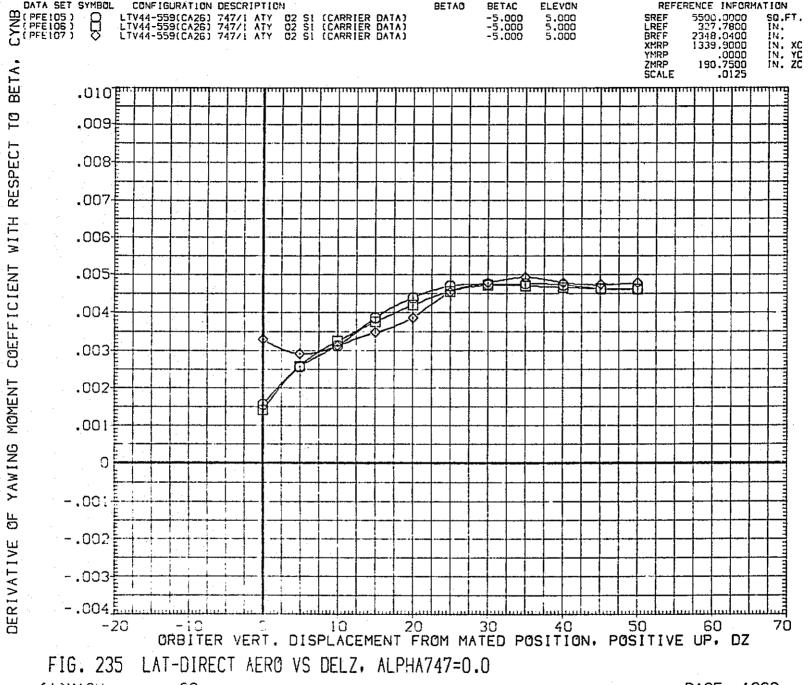


(A)MACH = .60

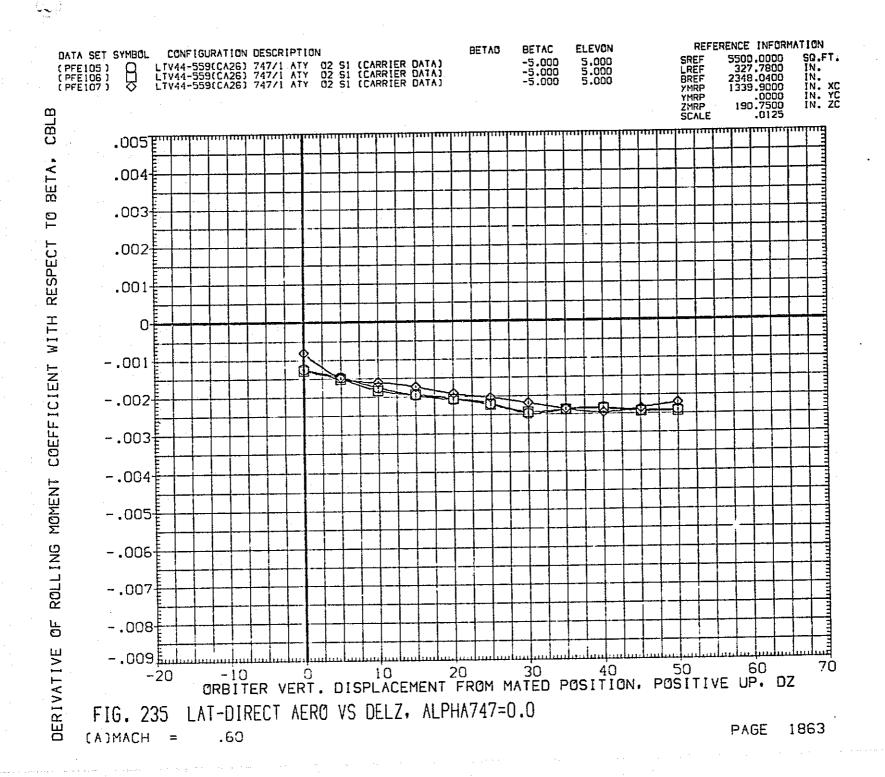


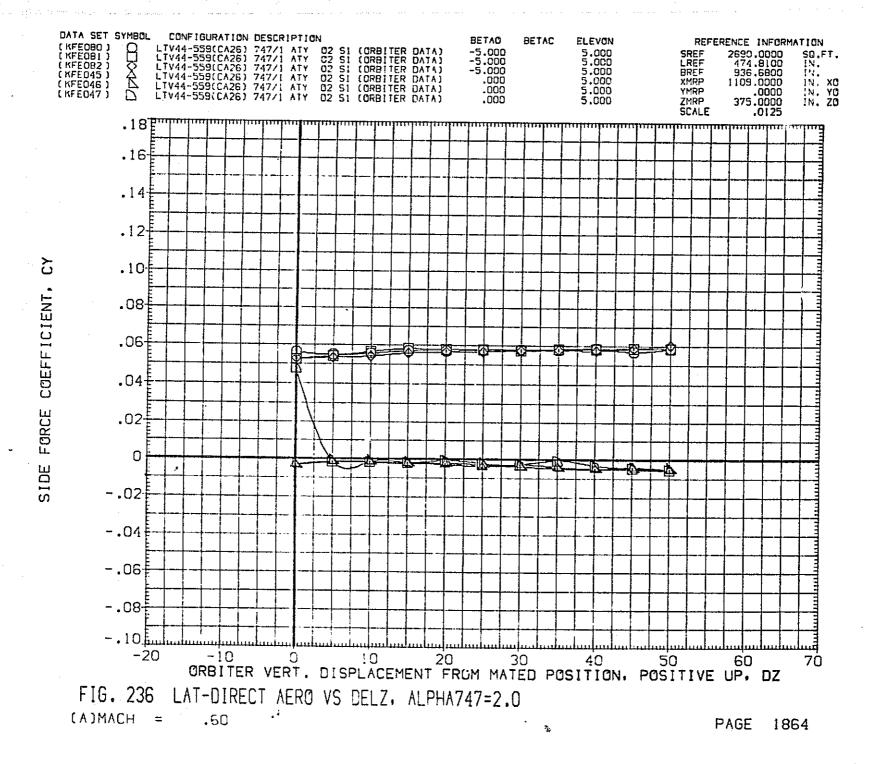


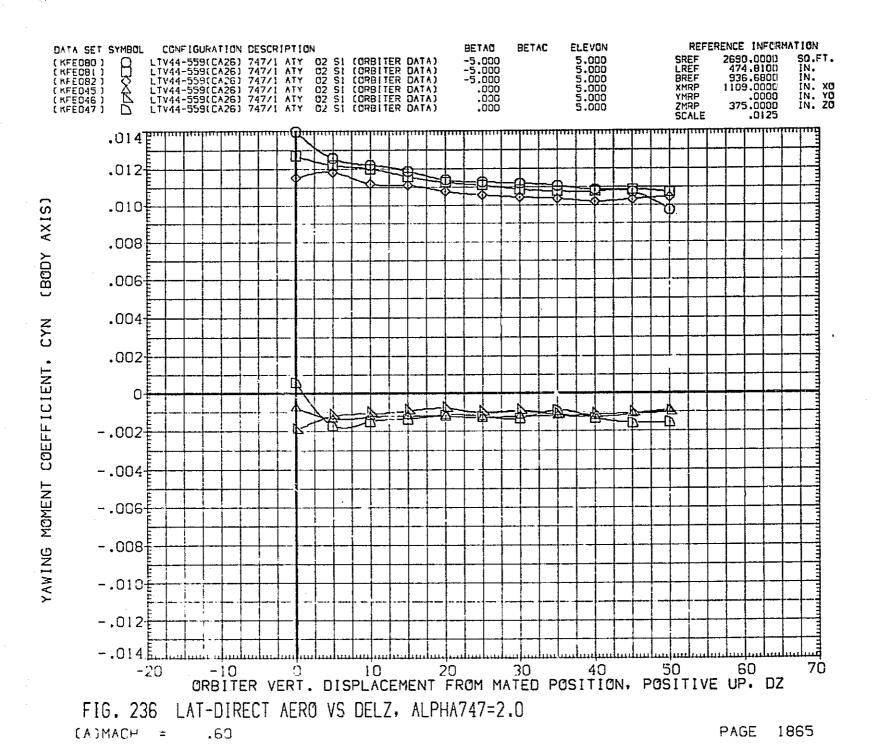




.60 (A)MACH =







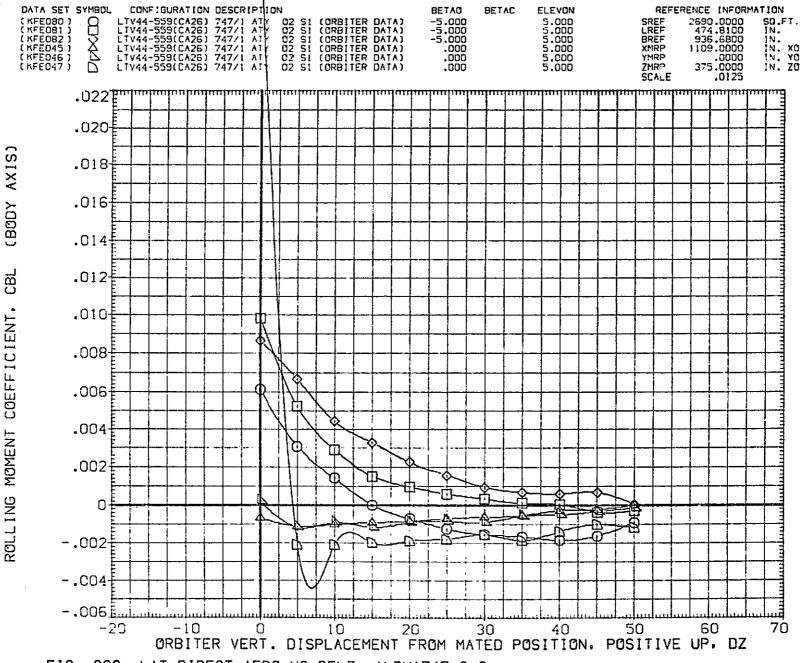
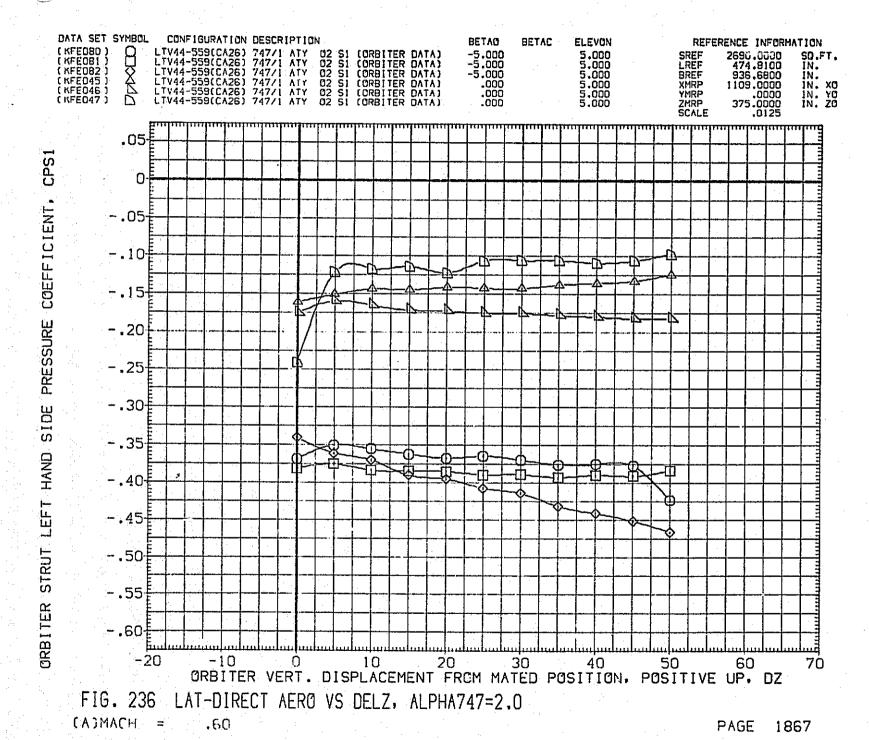
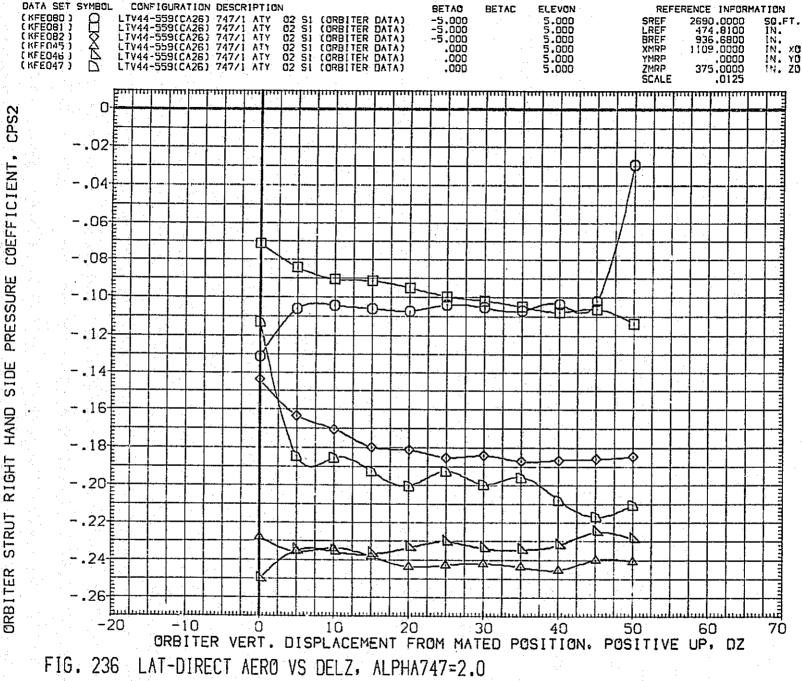


FIG. 236 LAT-DIRECT AERO VS DELZ, ALPHA747=2.0

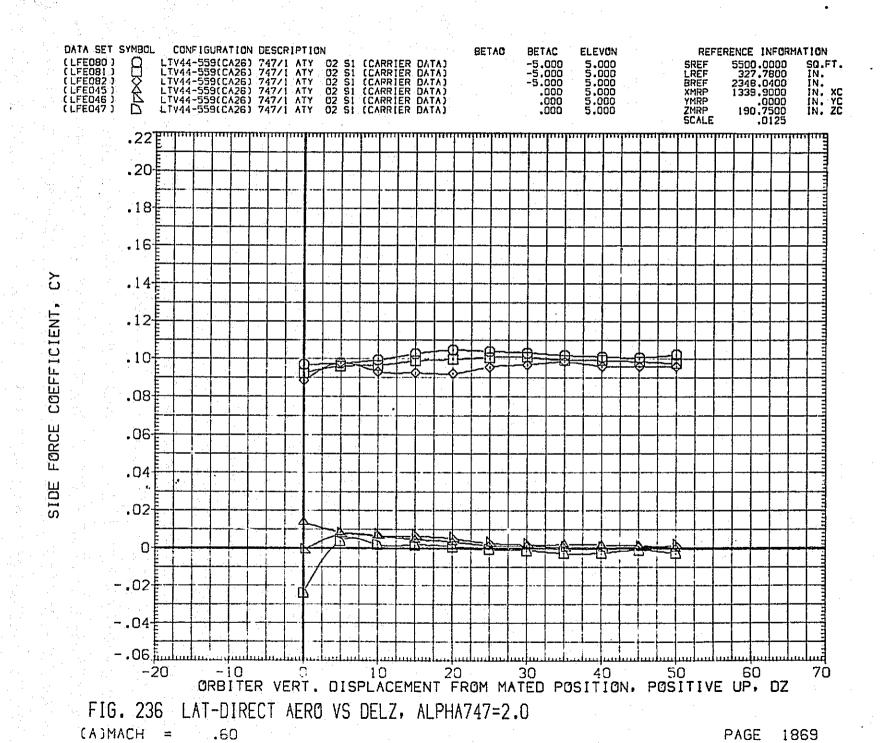
(A)MACH = .60

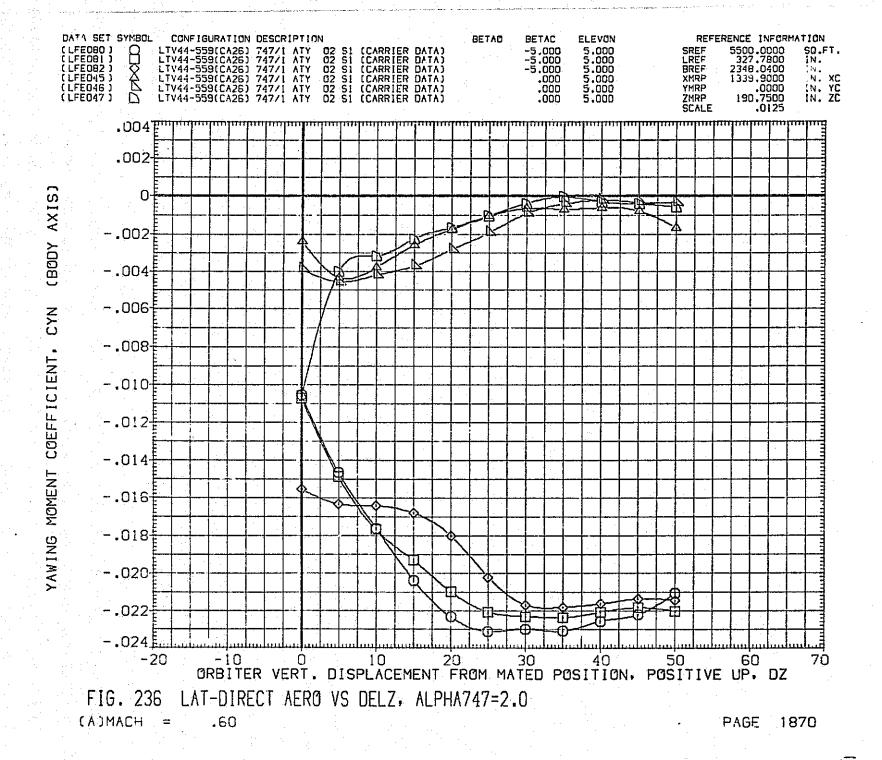




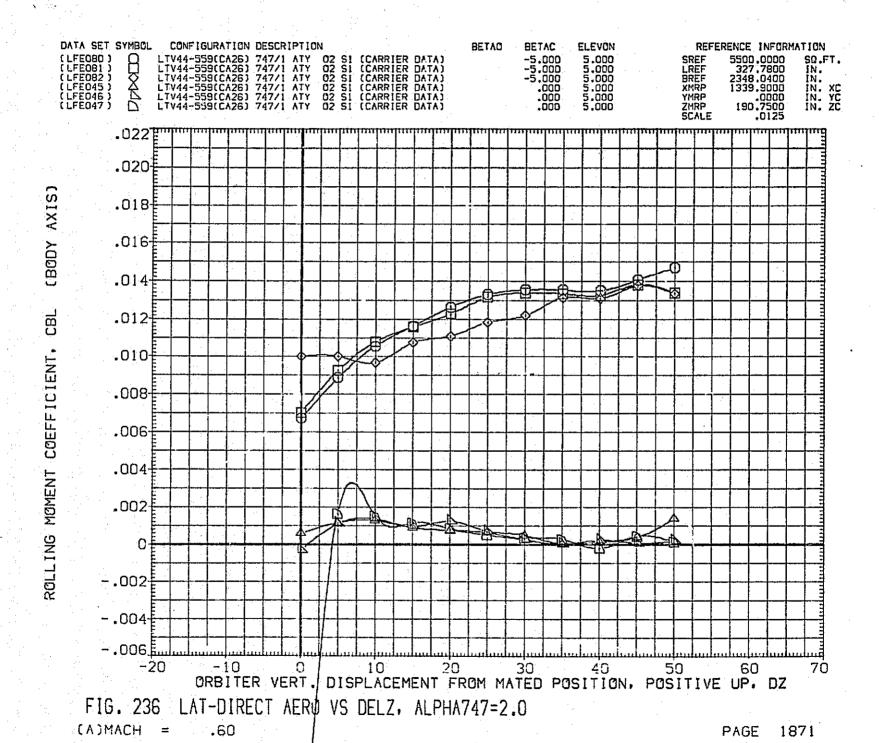


(A)MACH .60

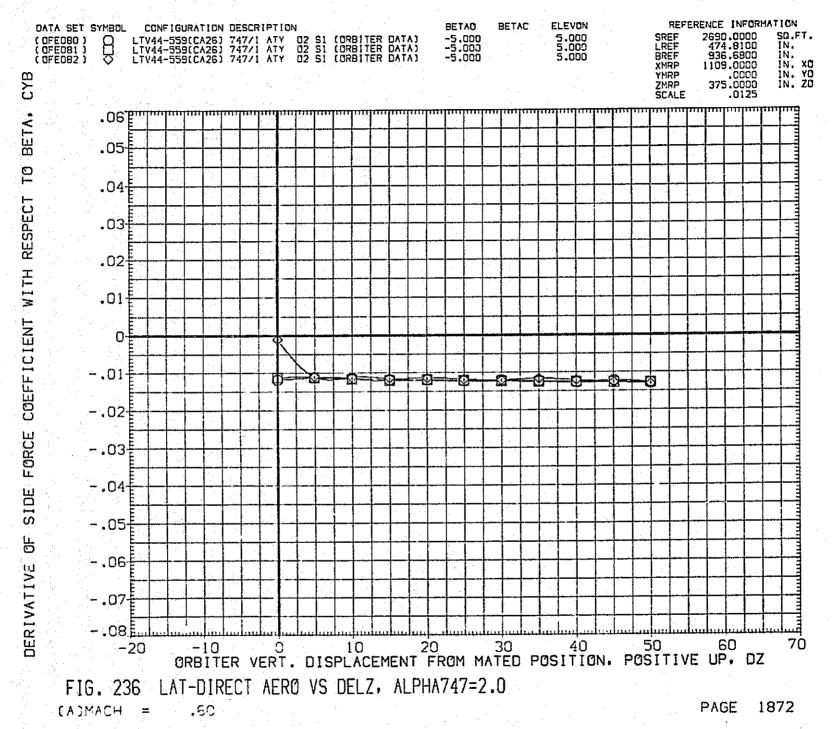












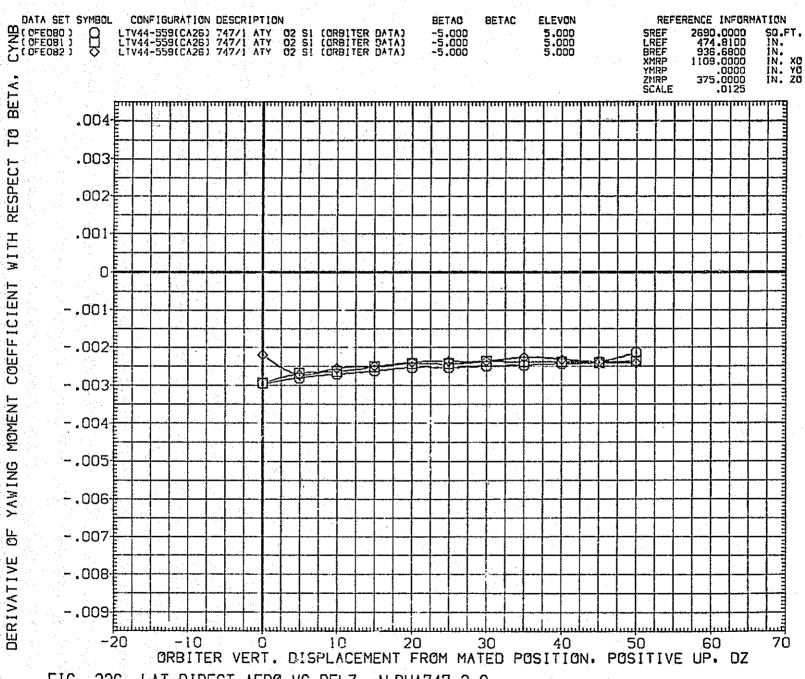
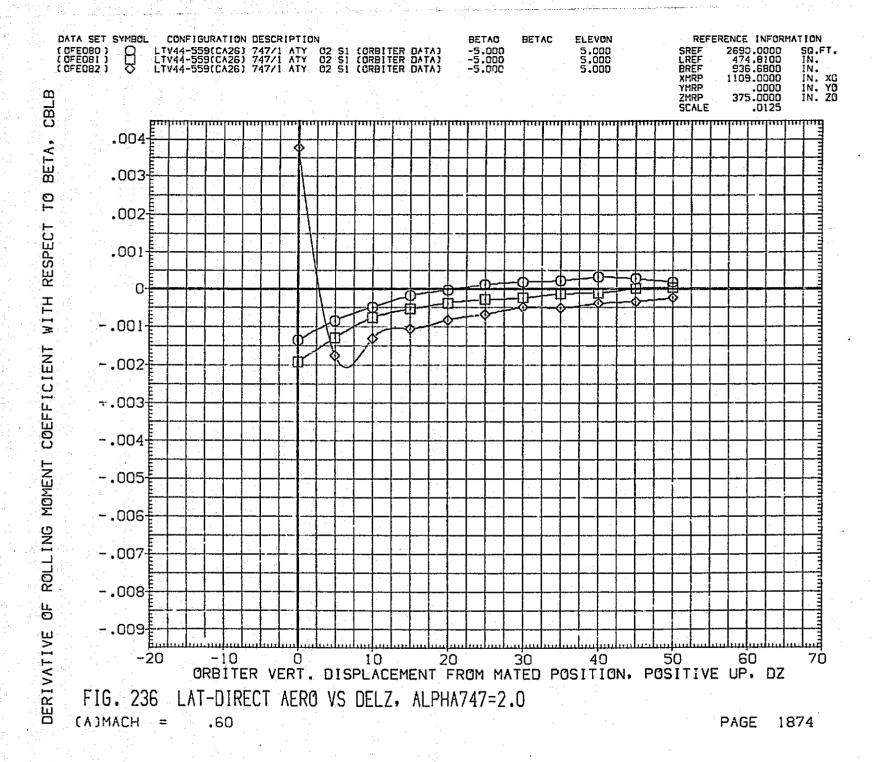
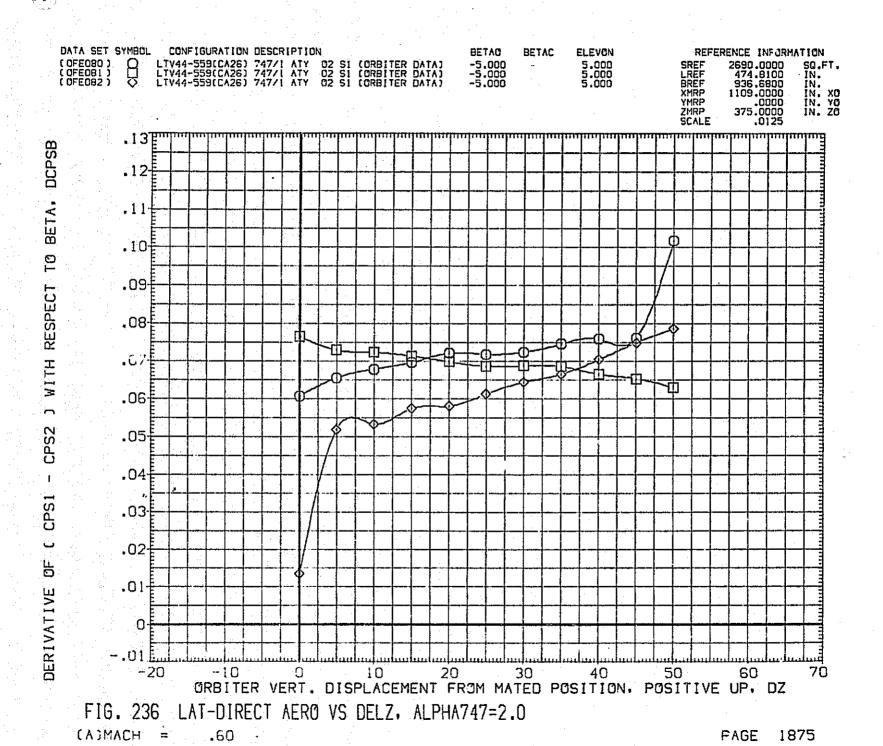
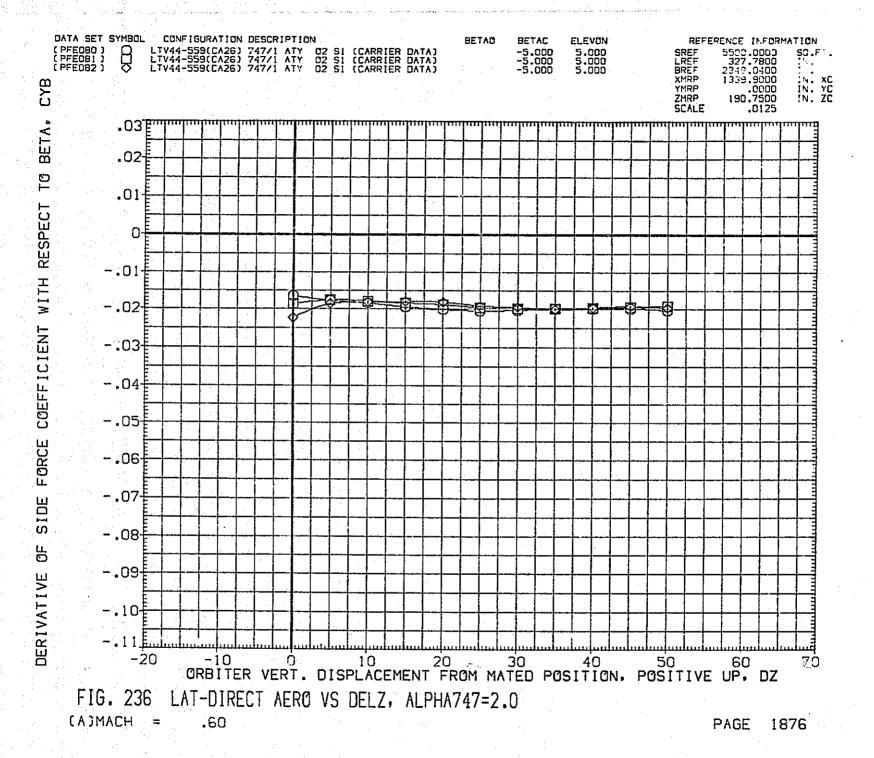
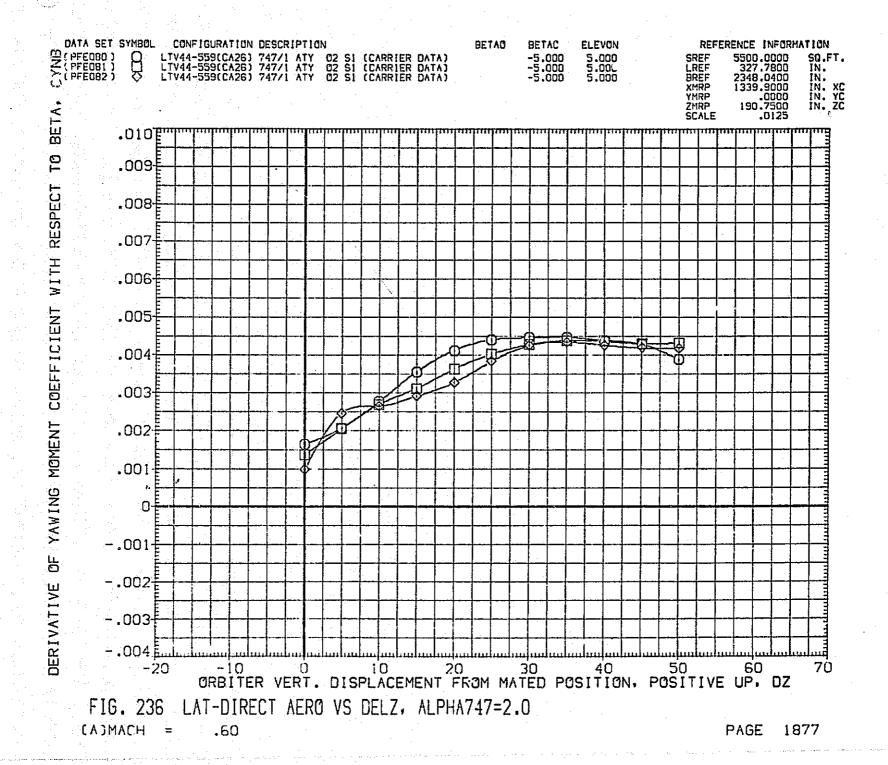


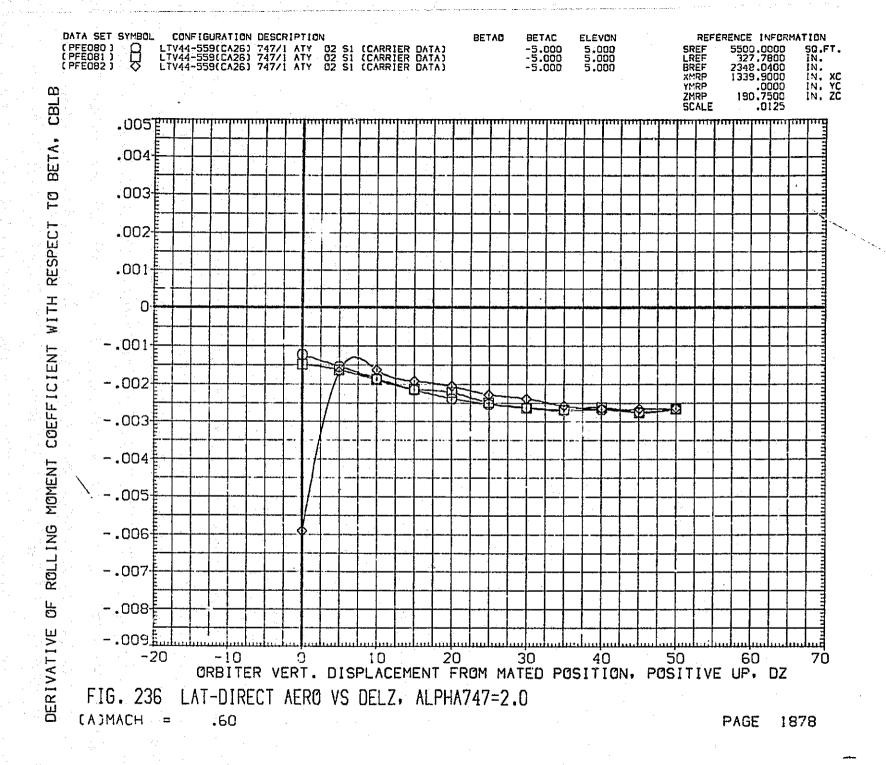
FIG. 236 LAT-DIRECT AERO VS DELZ, ALPHA747=2.0











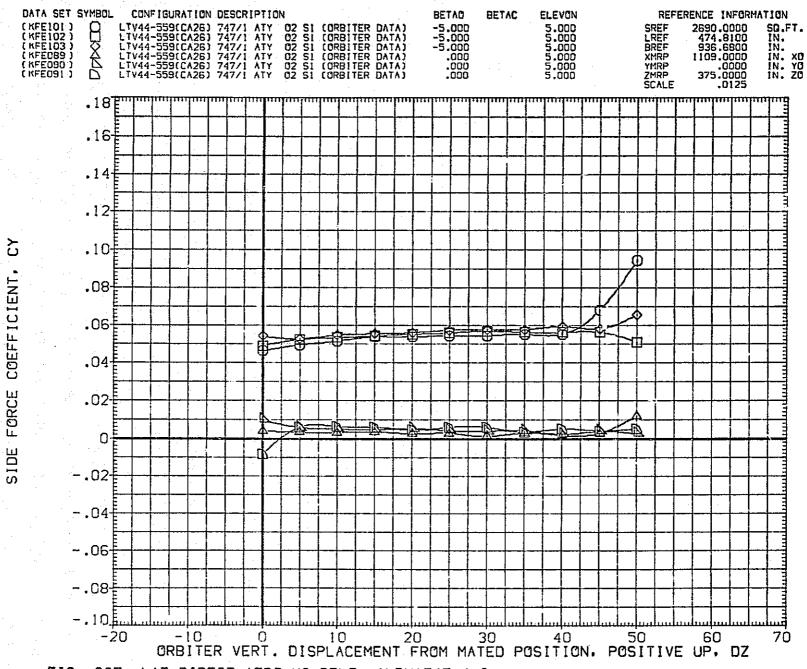
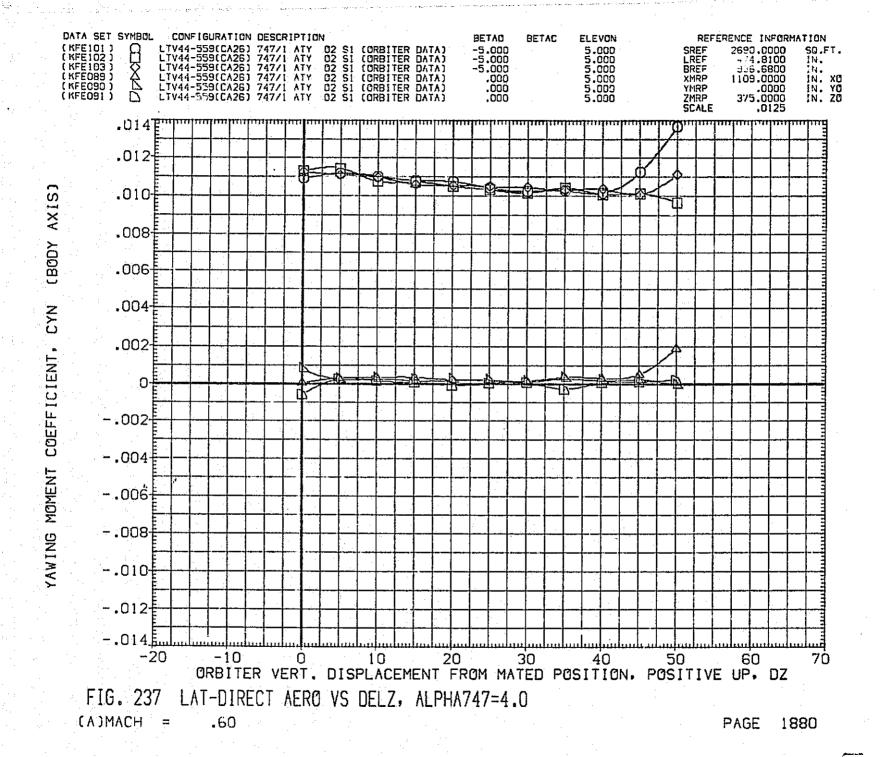
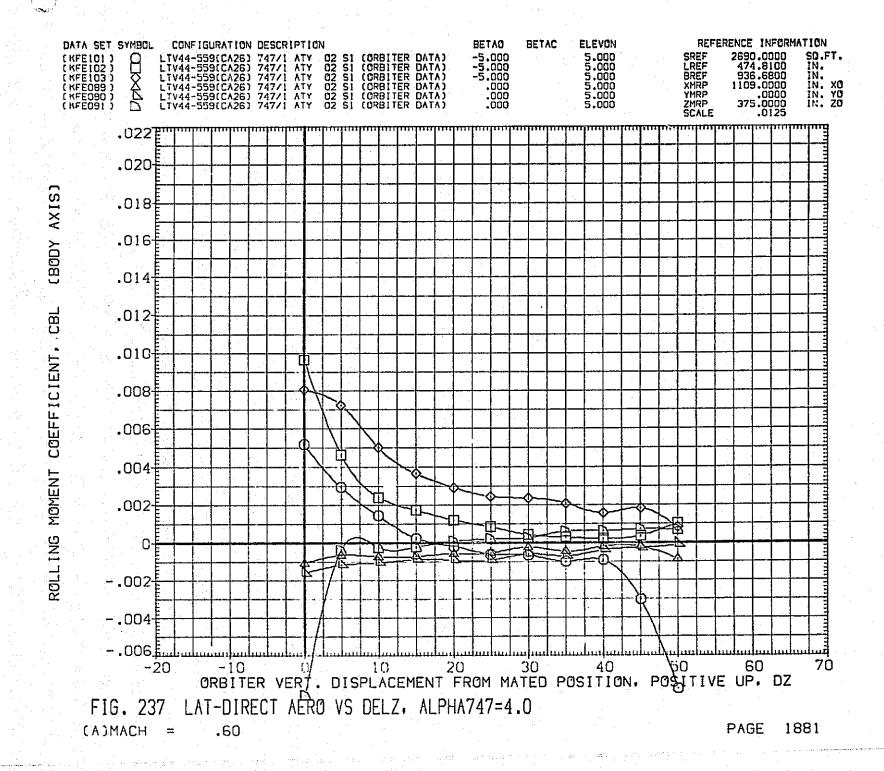


FIG. 237 LAT-DIRECT AERO VS DELZ, ALPHA747=4.0





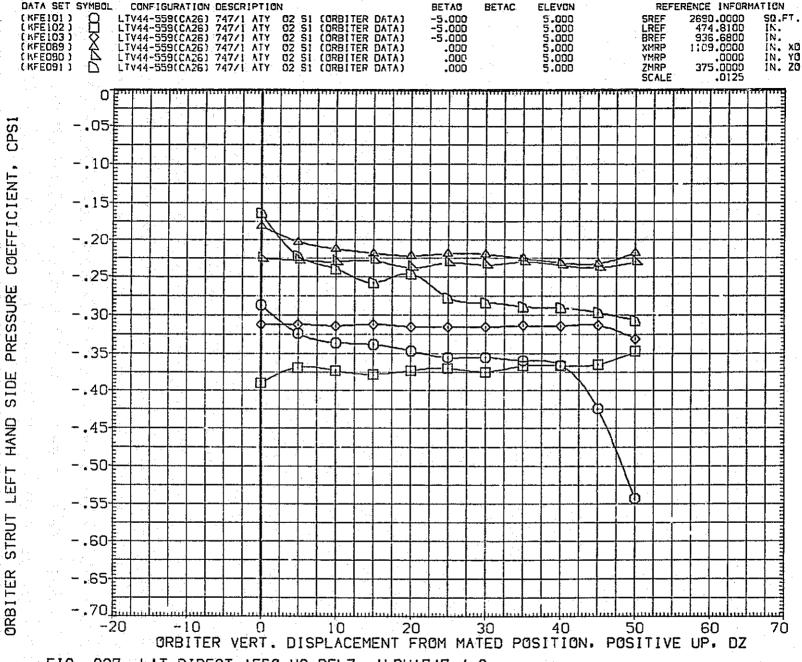
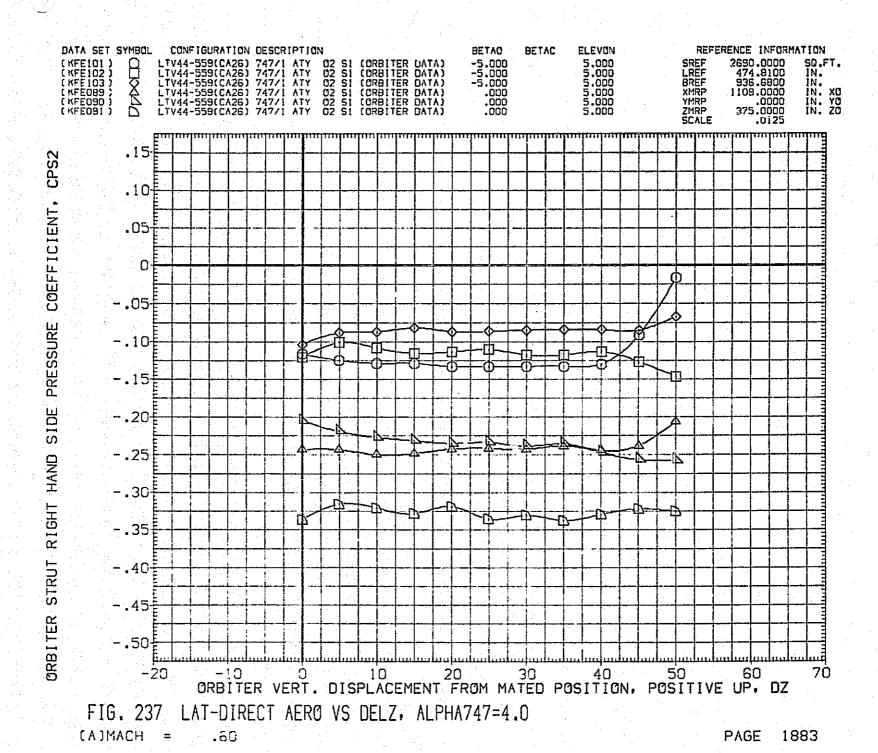
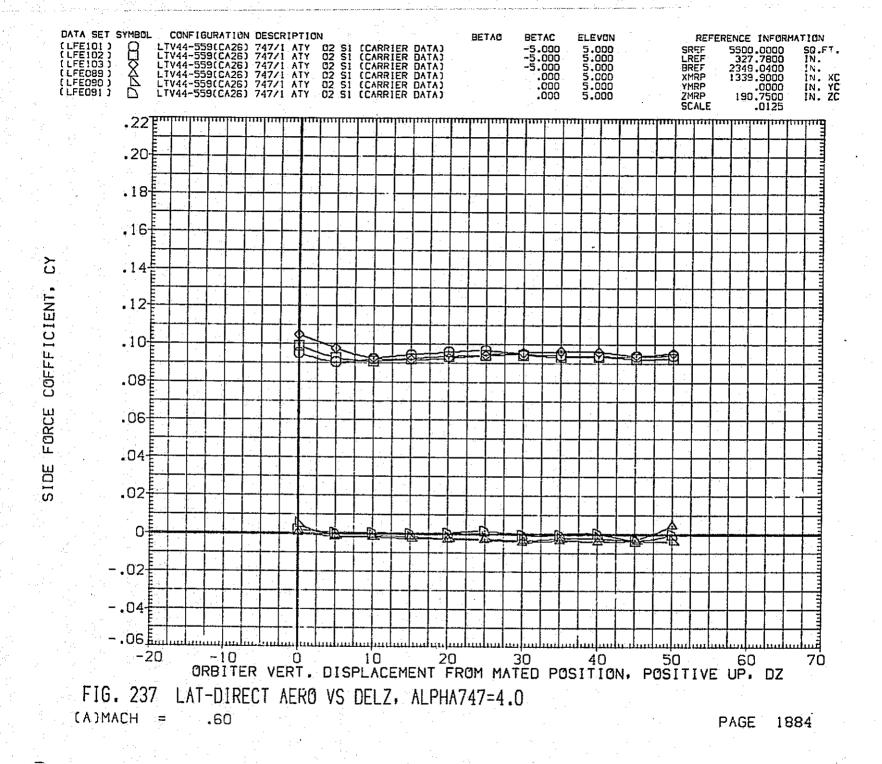


FIG. 237 LAT-DIRECT AERO VS DELZ, ALPHA747=4.0





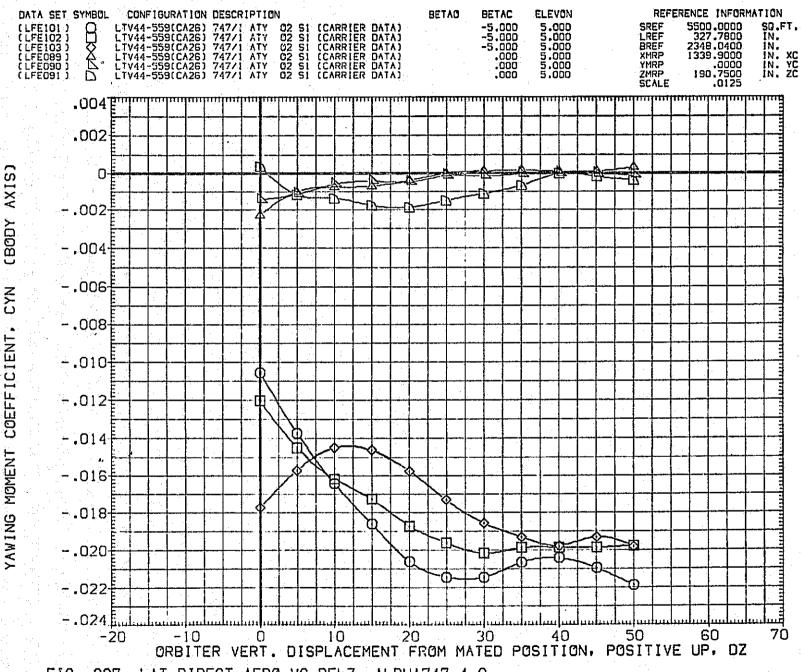
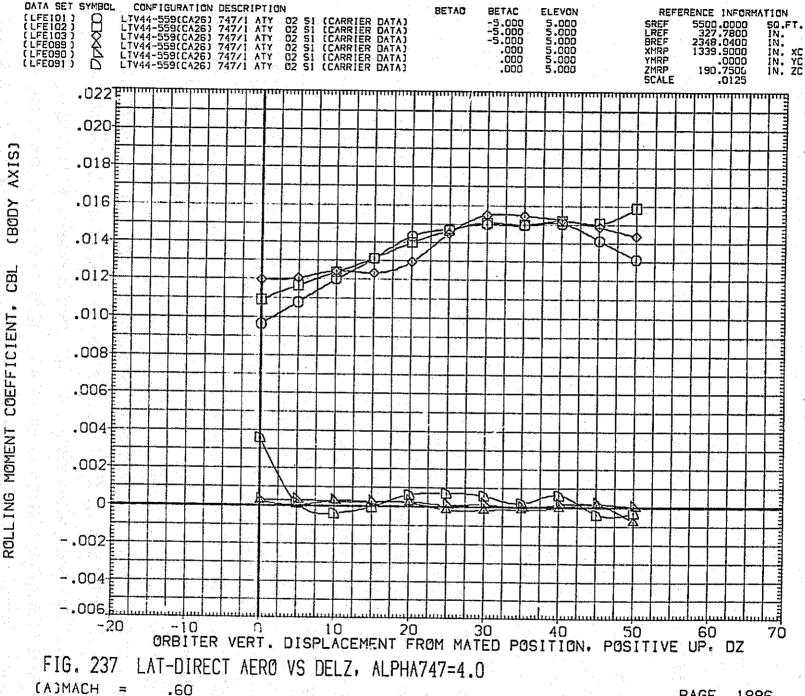
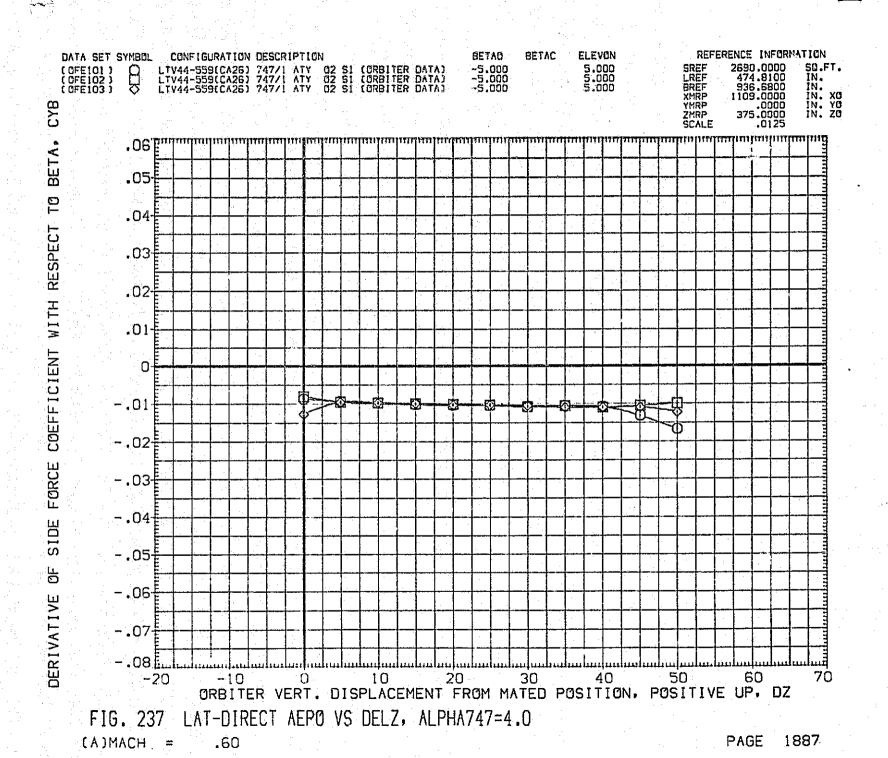
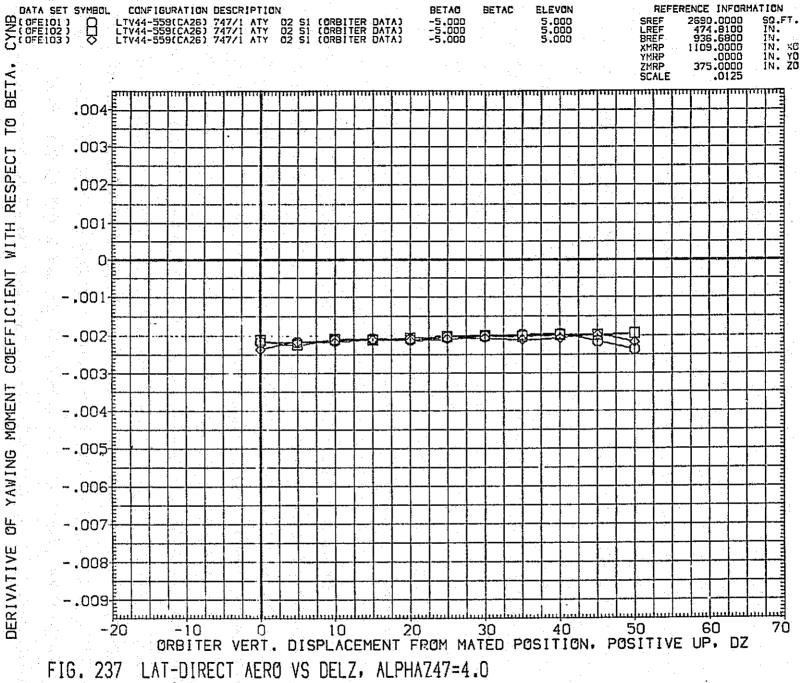


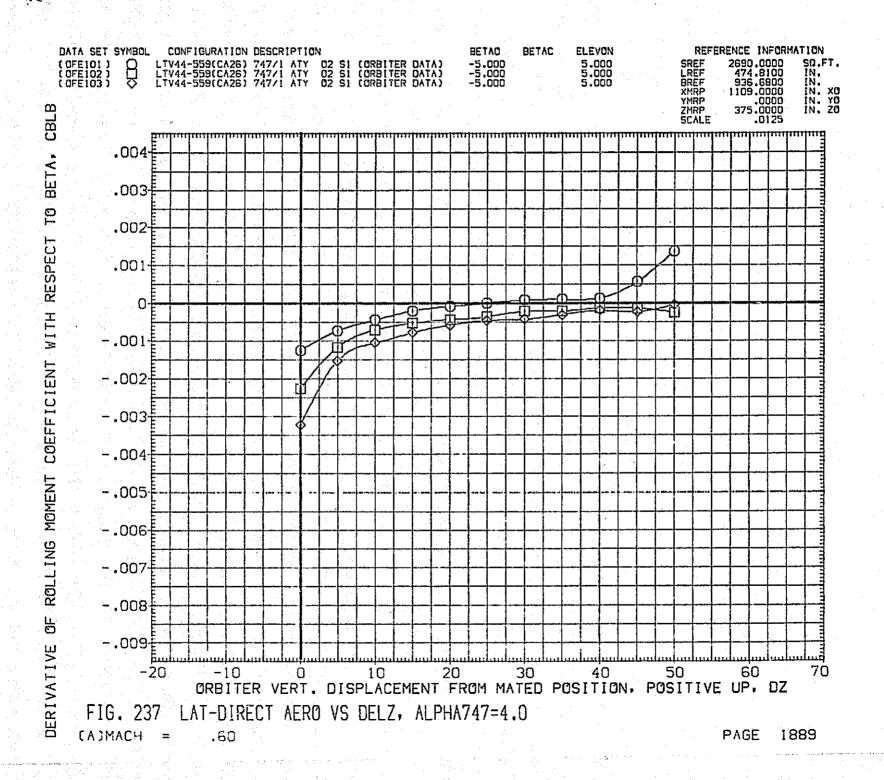
FIG. 237 LAT-DIRECT AERO VS DELZ, ALPHA747=4.0

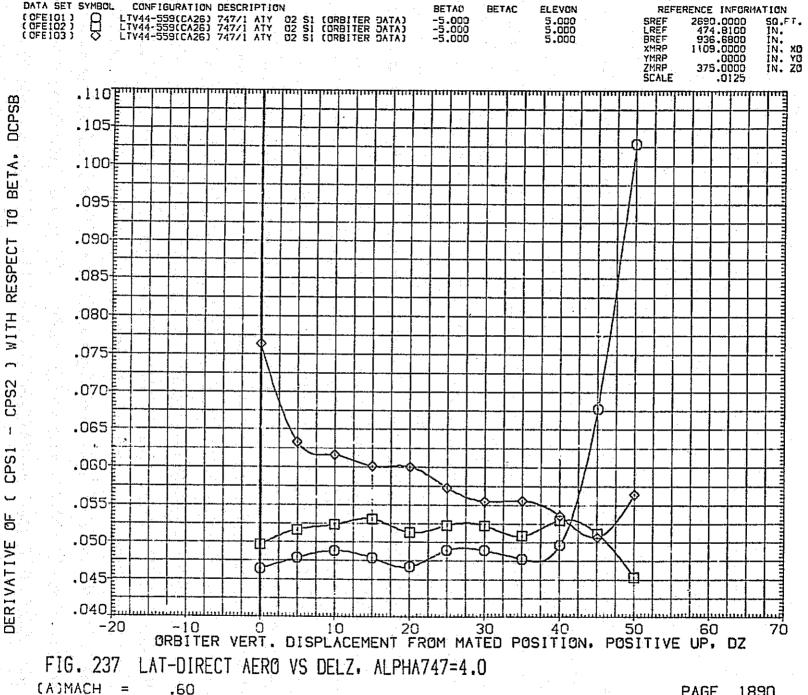


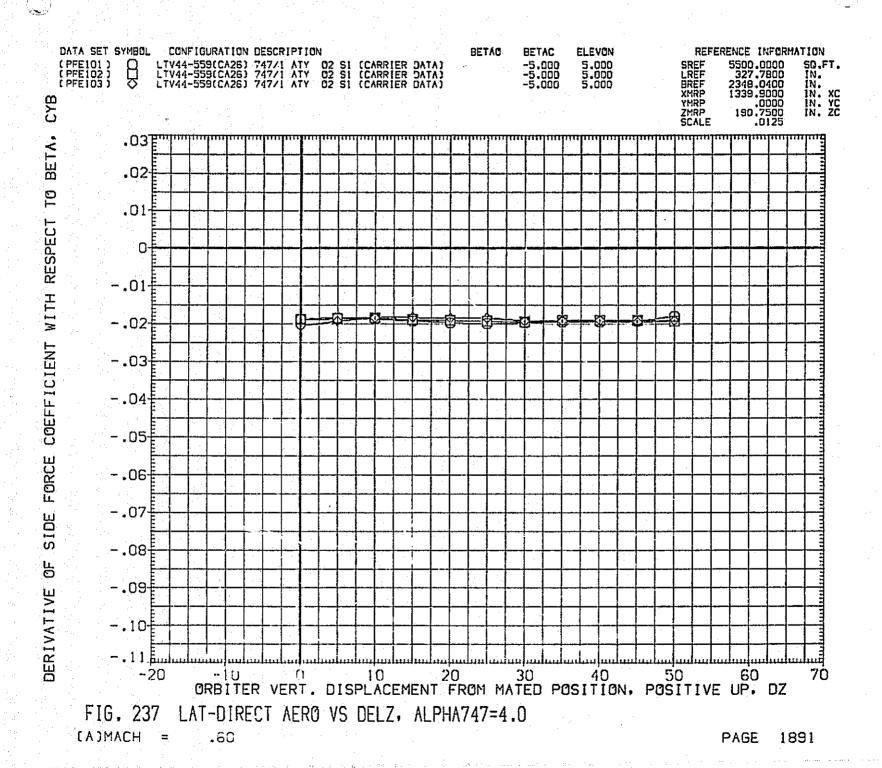


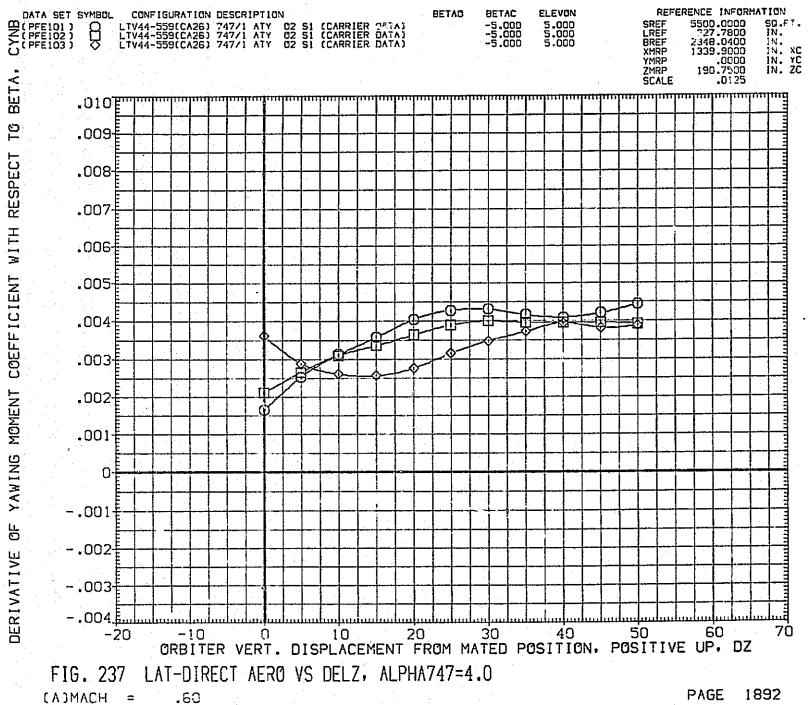


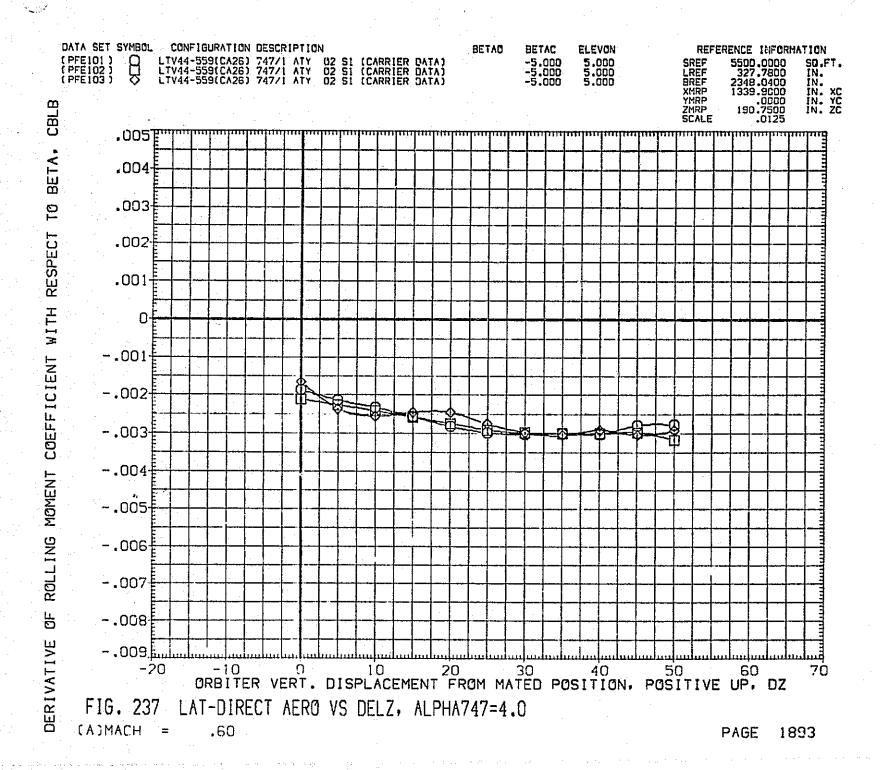
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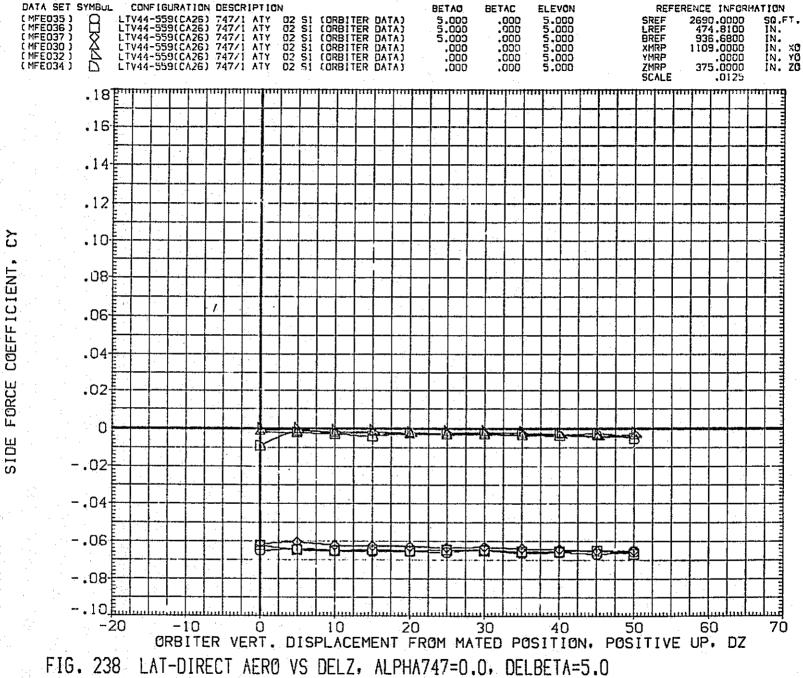
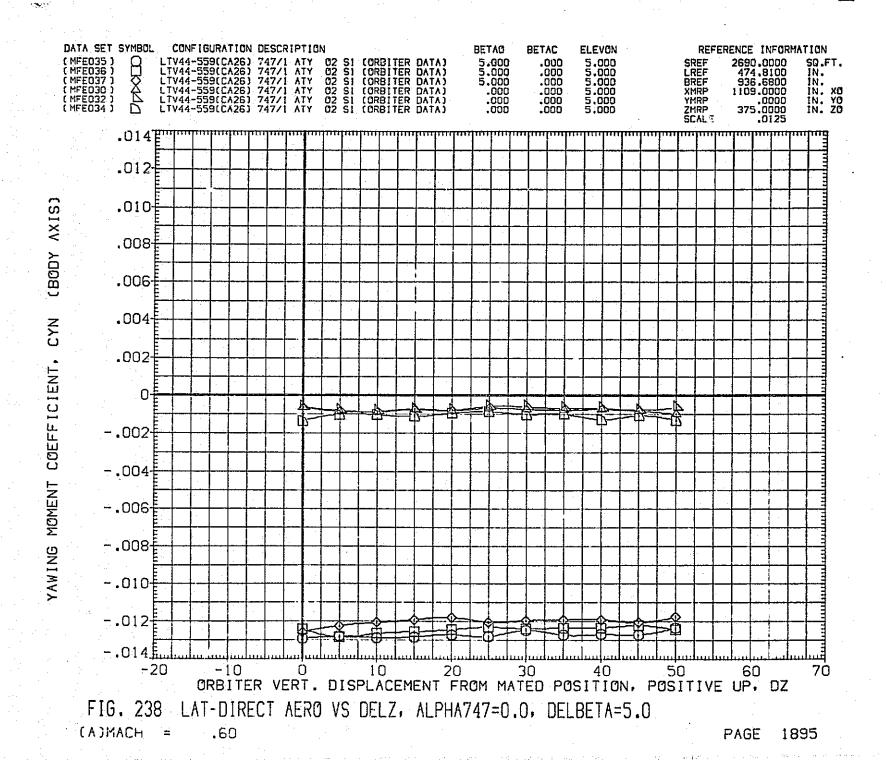


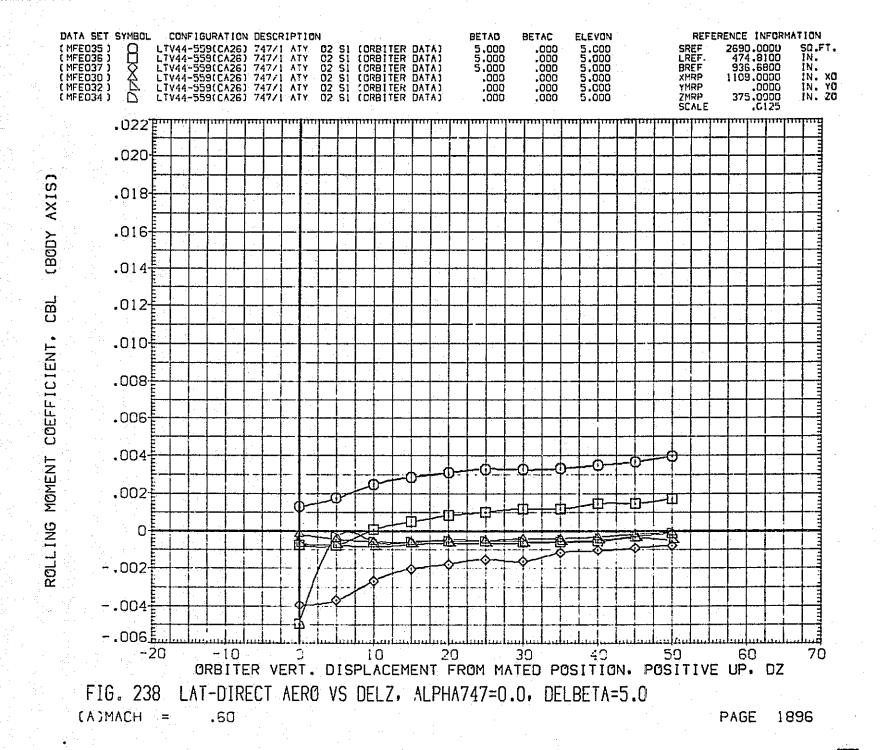
FIG. 238 LAI-DIRECT AERO VS DELZ, ALPHA747=0.0, DELBETA=5.0

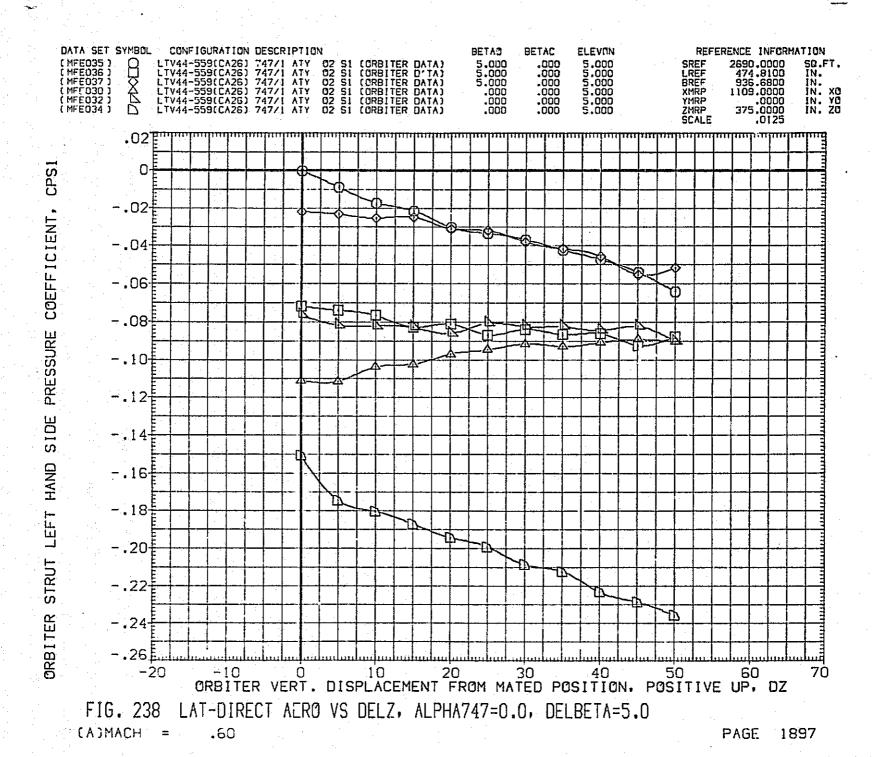
(A)MACH = .60

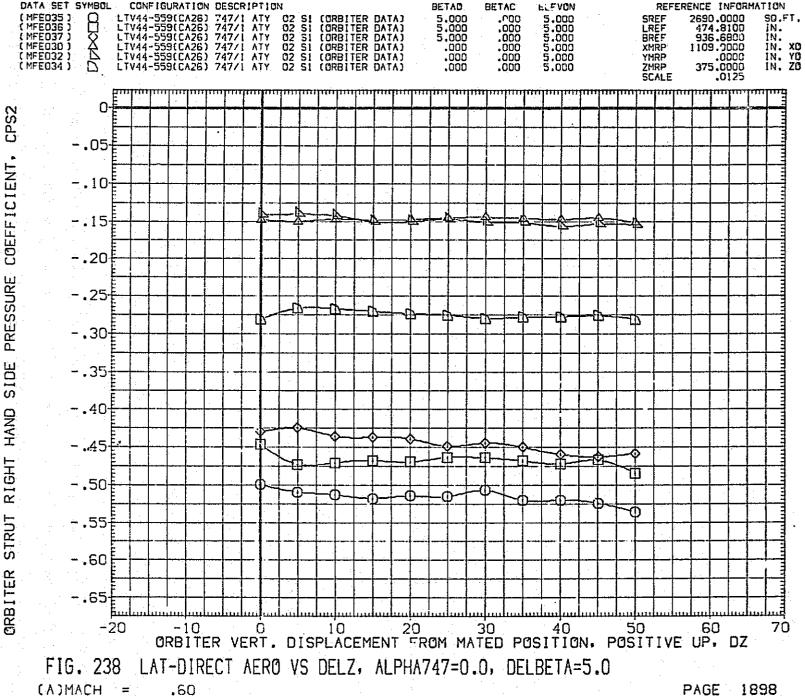
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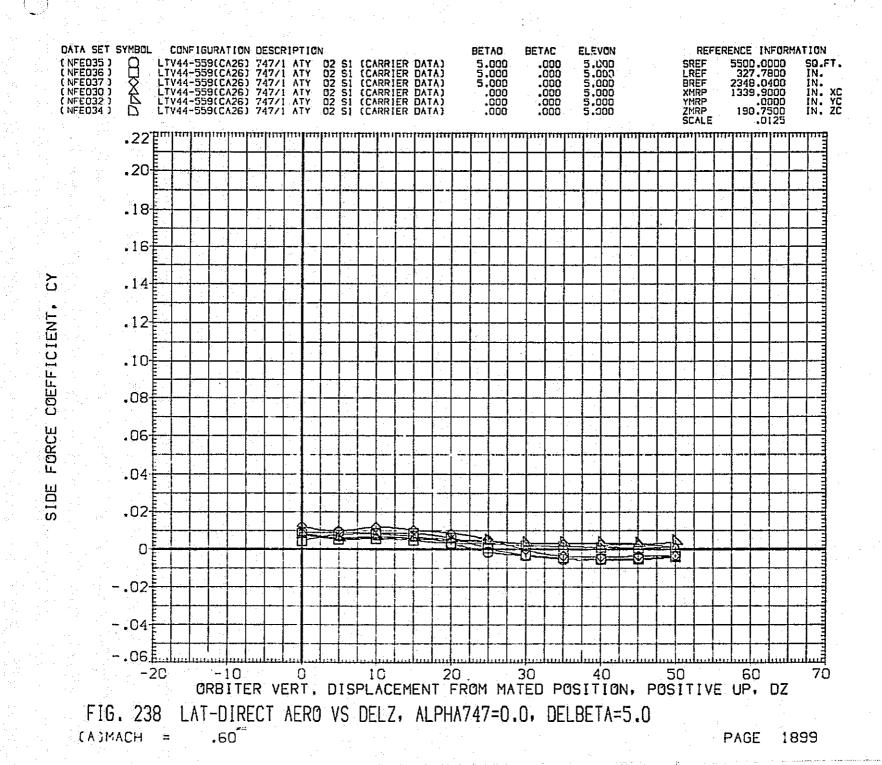


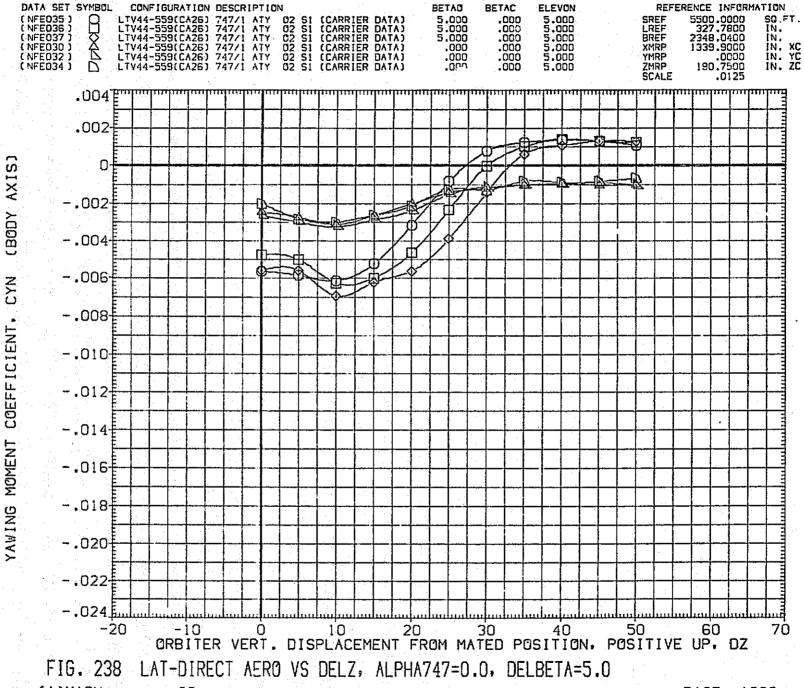




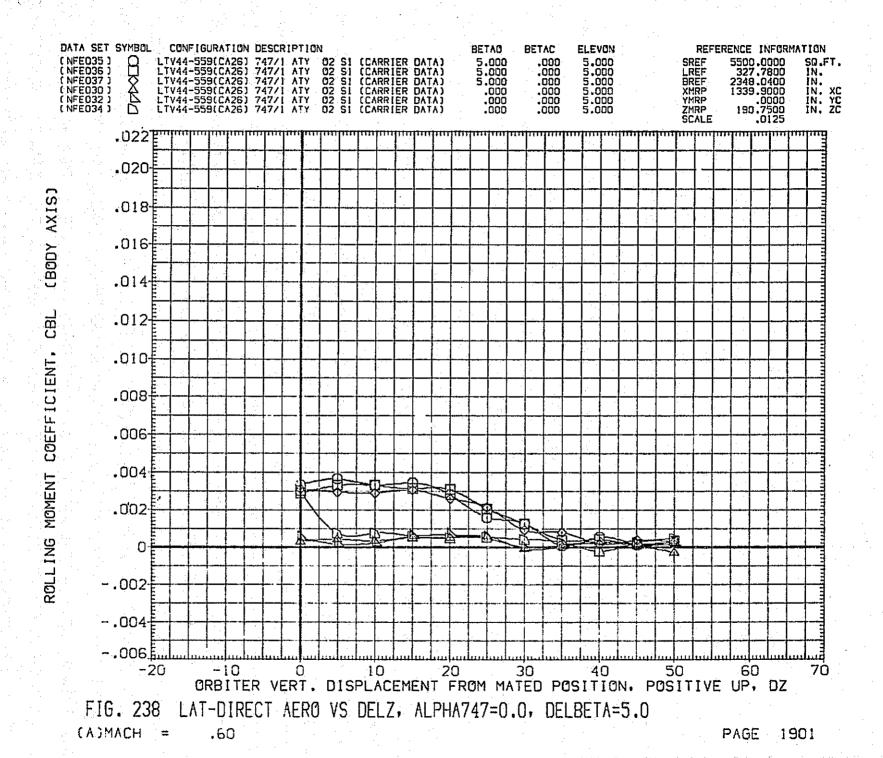


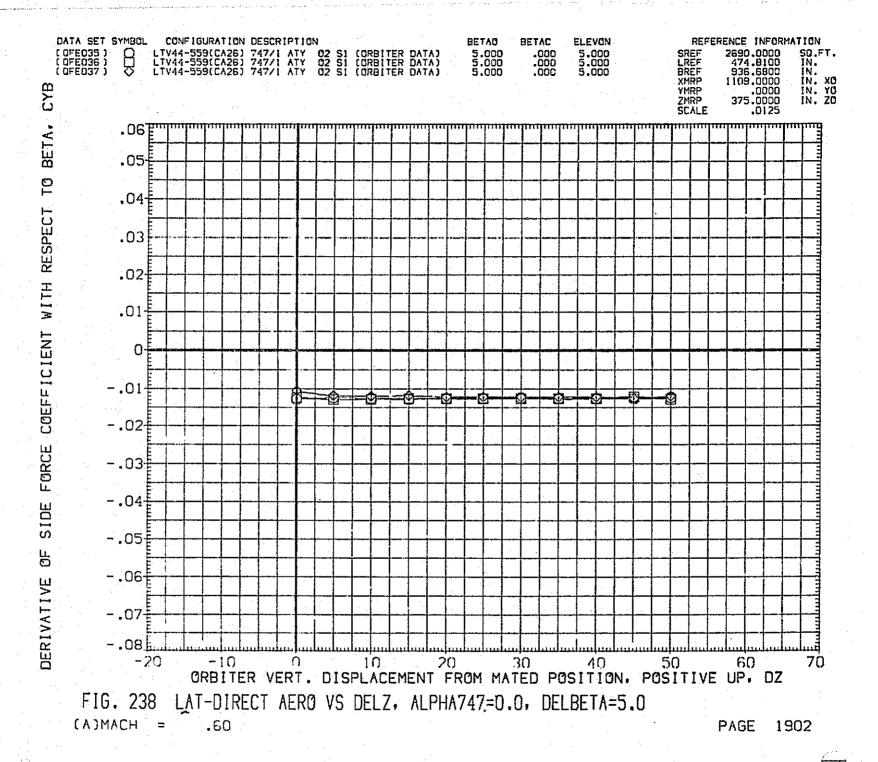
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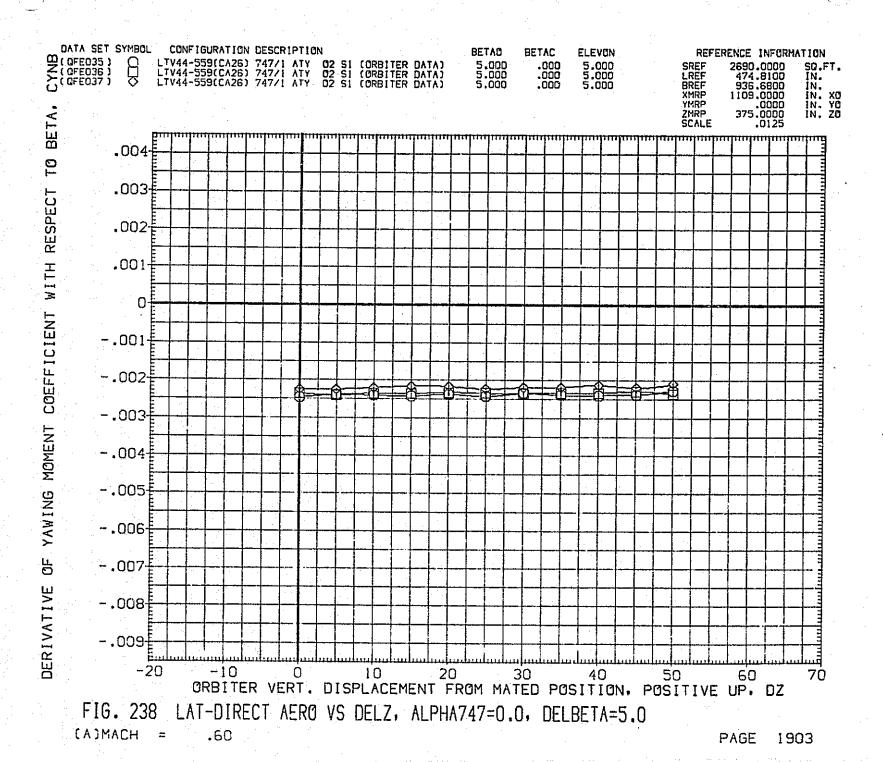


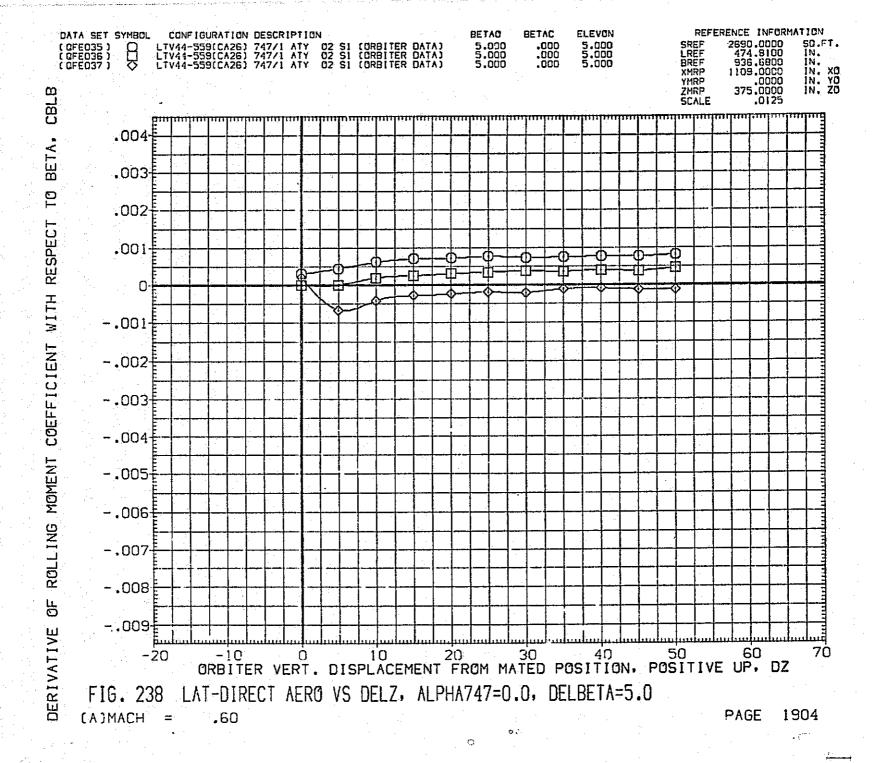


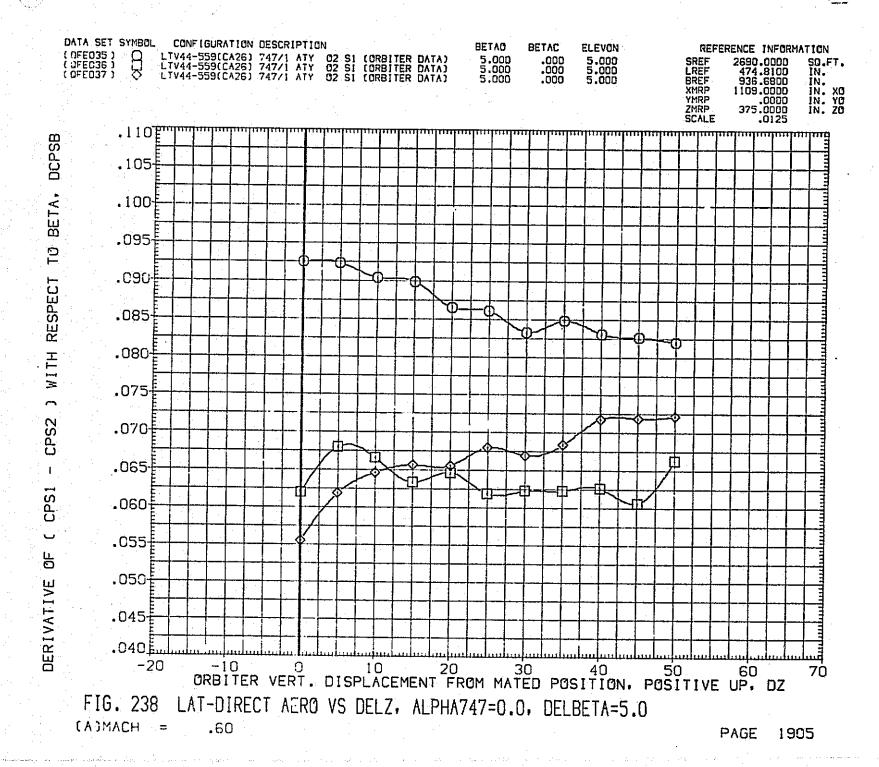
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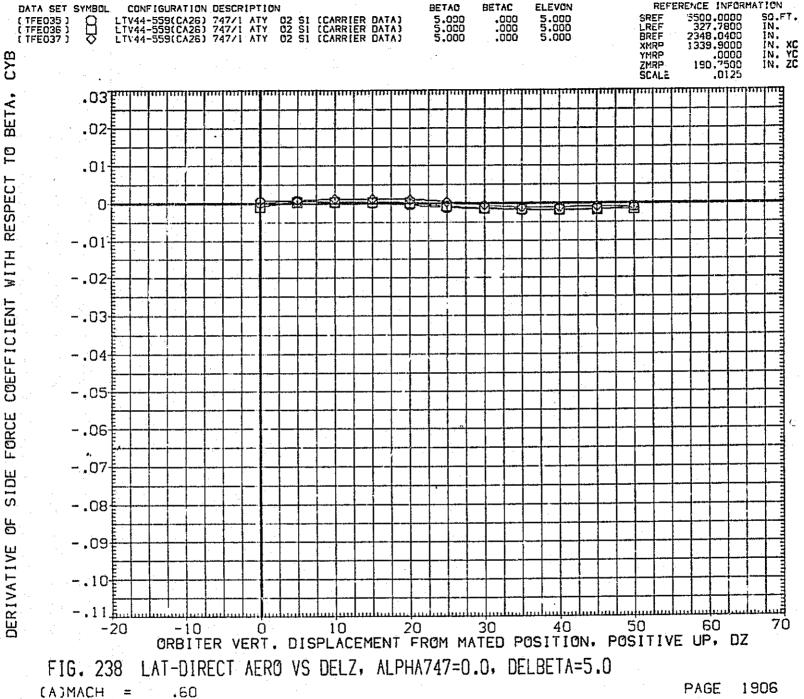


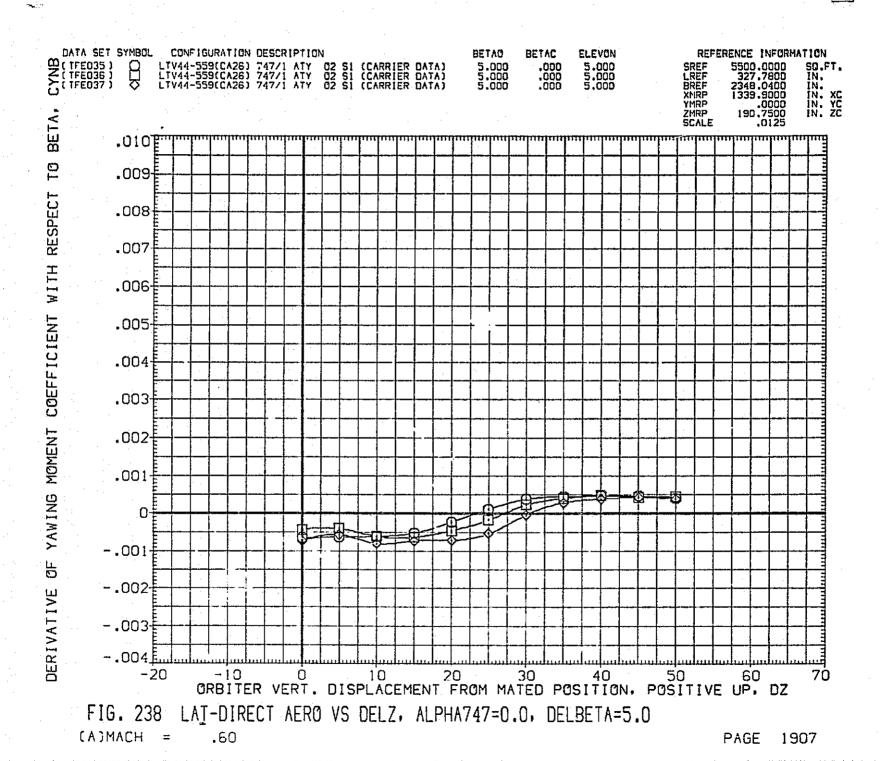


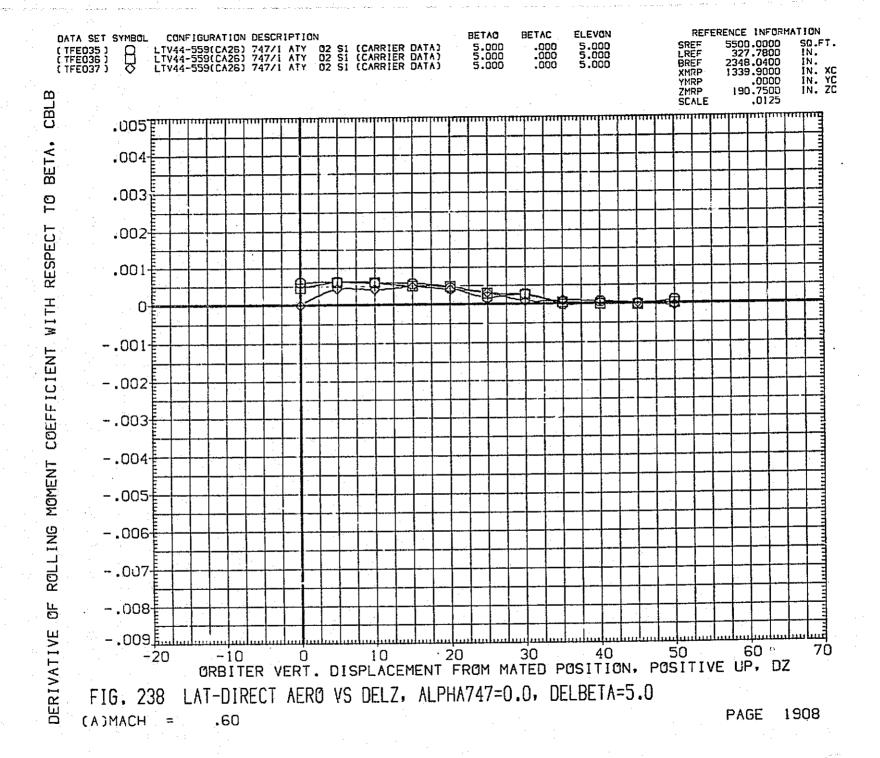


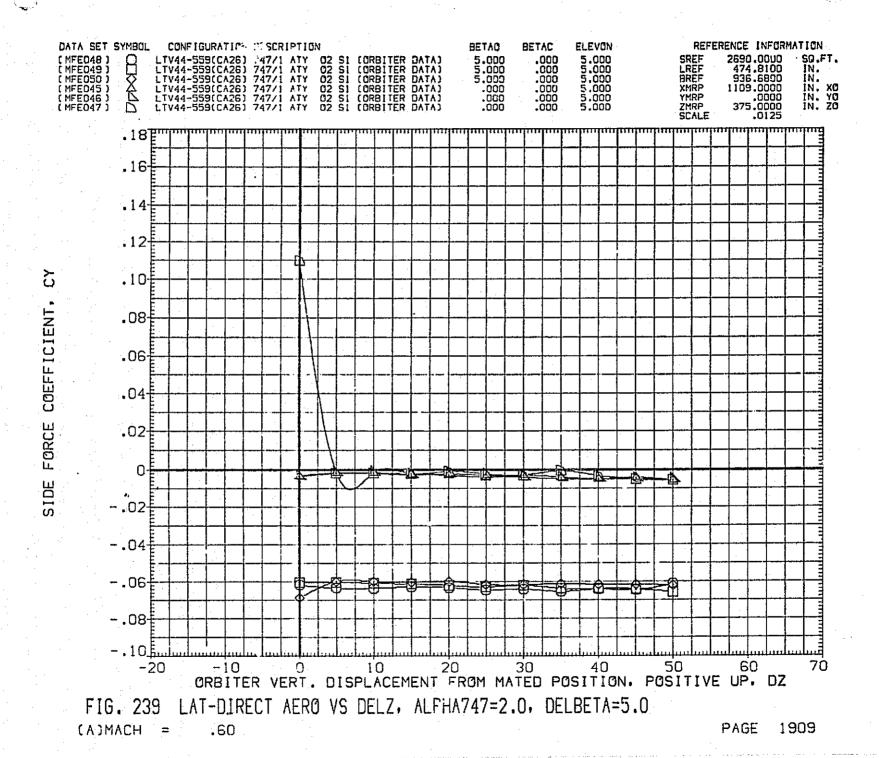


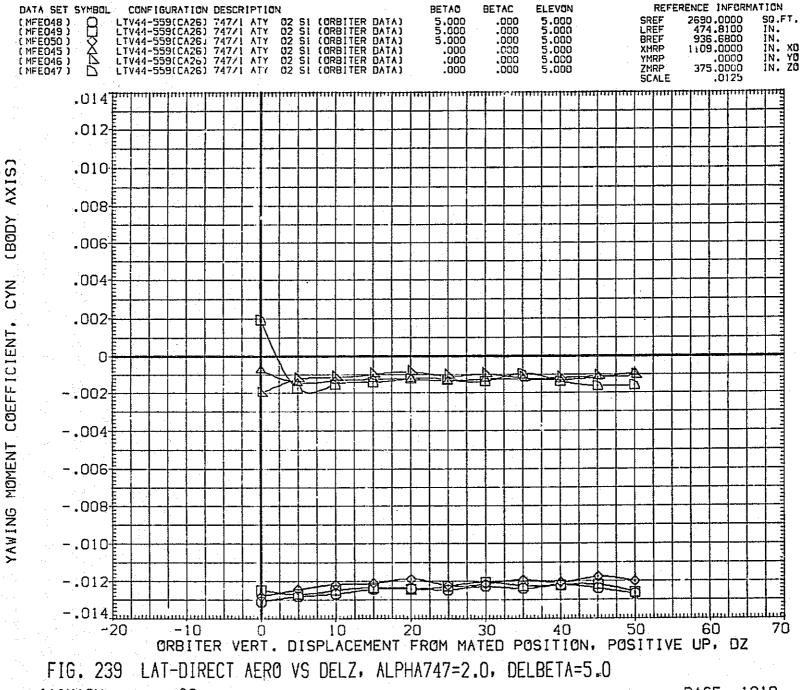




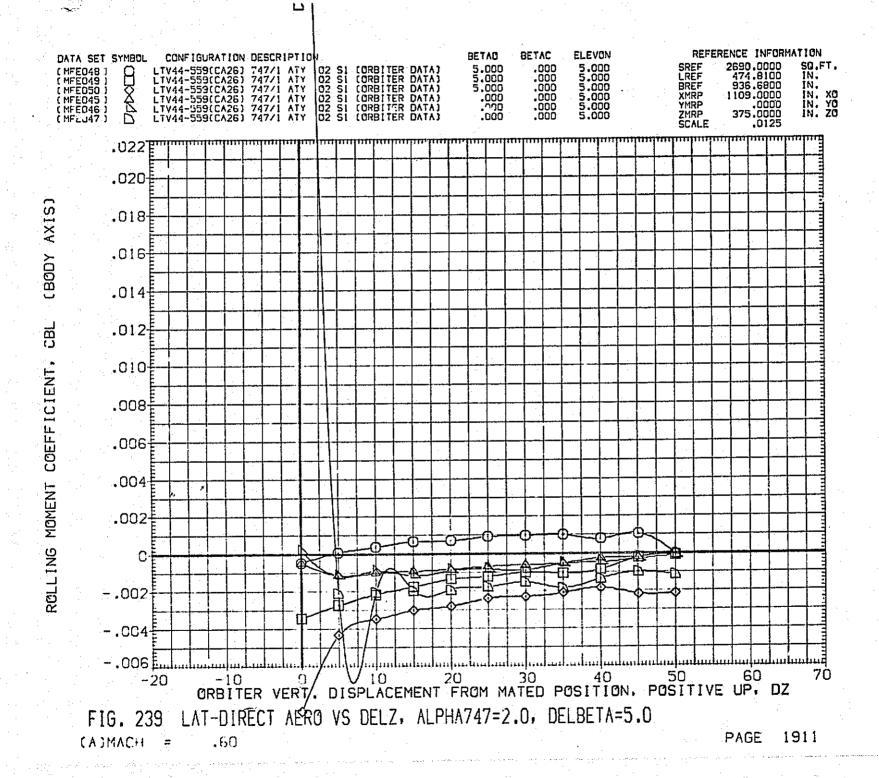


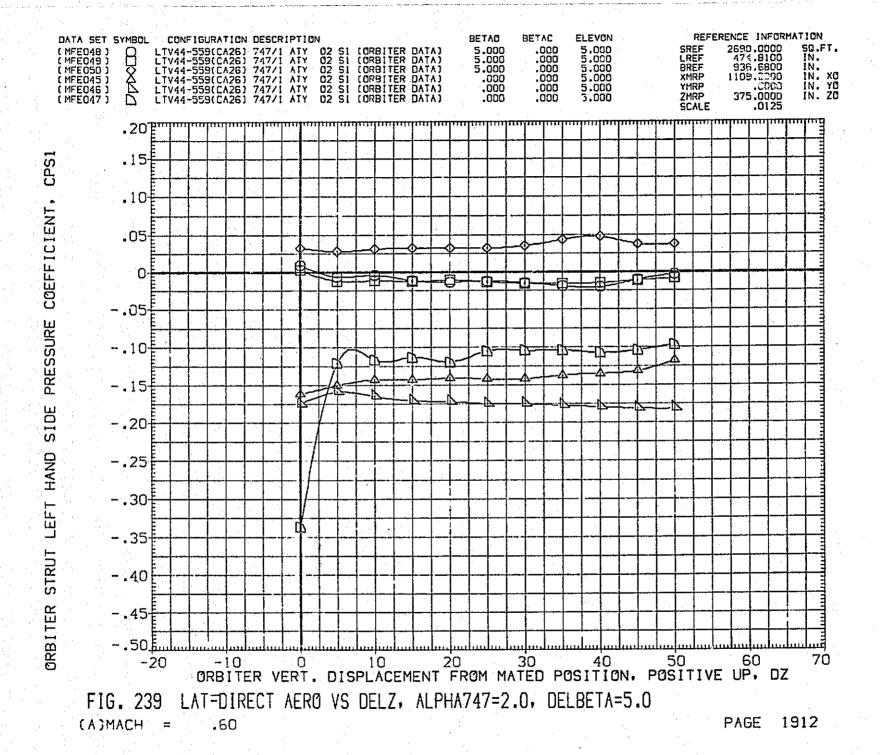


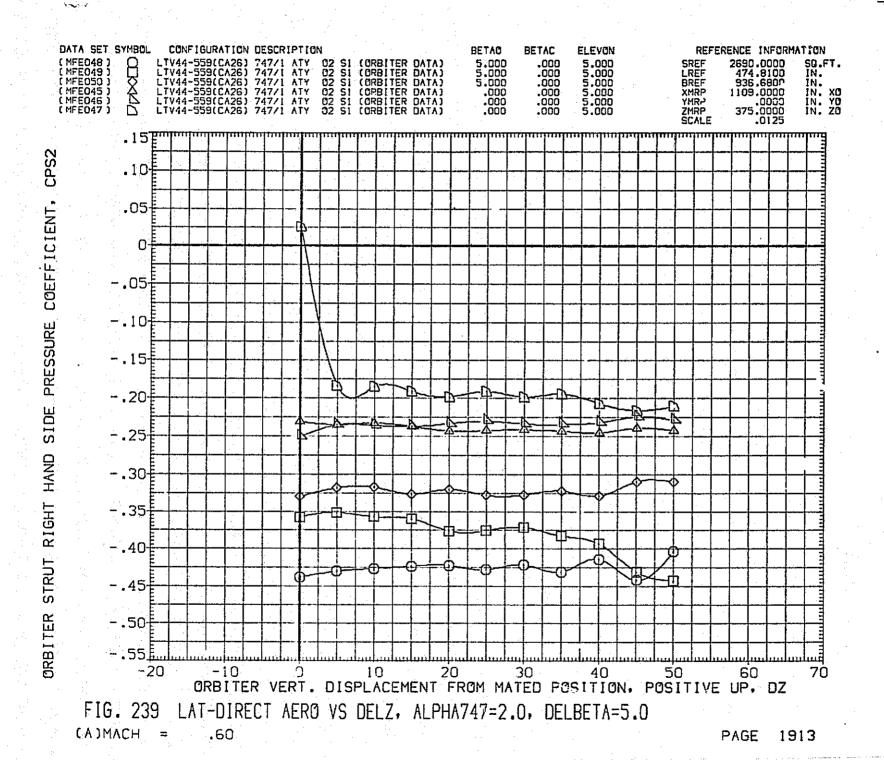


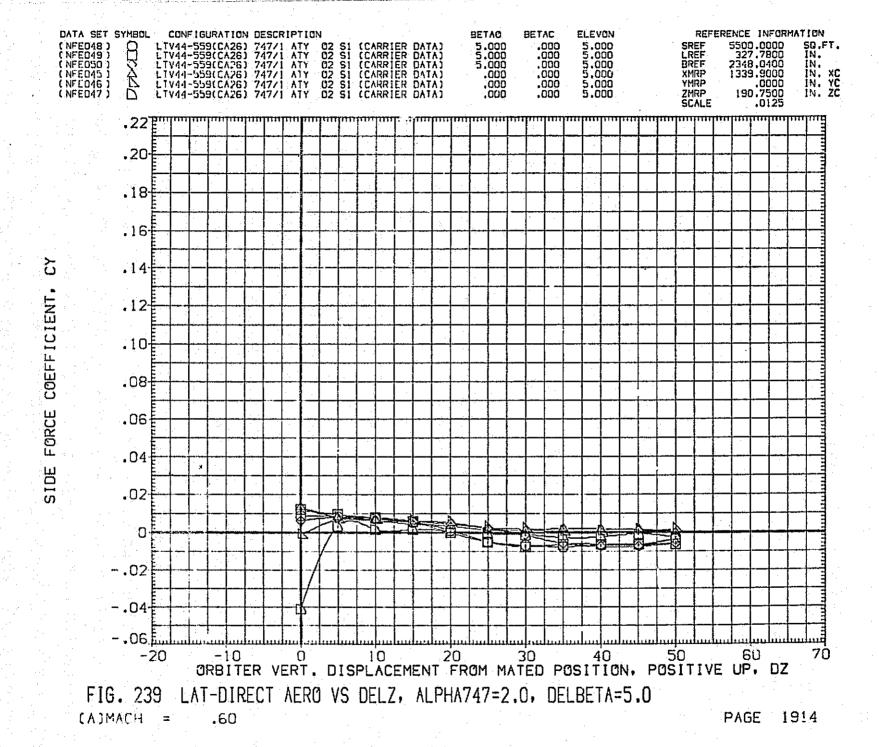


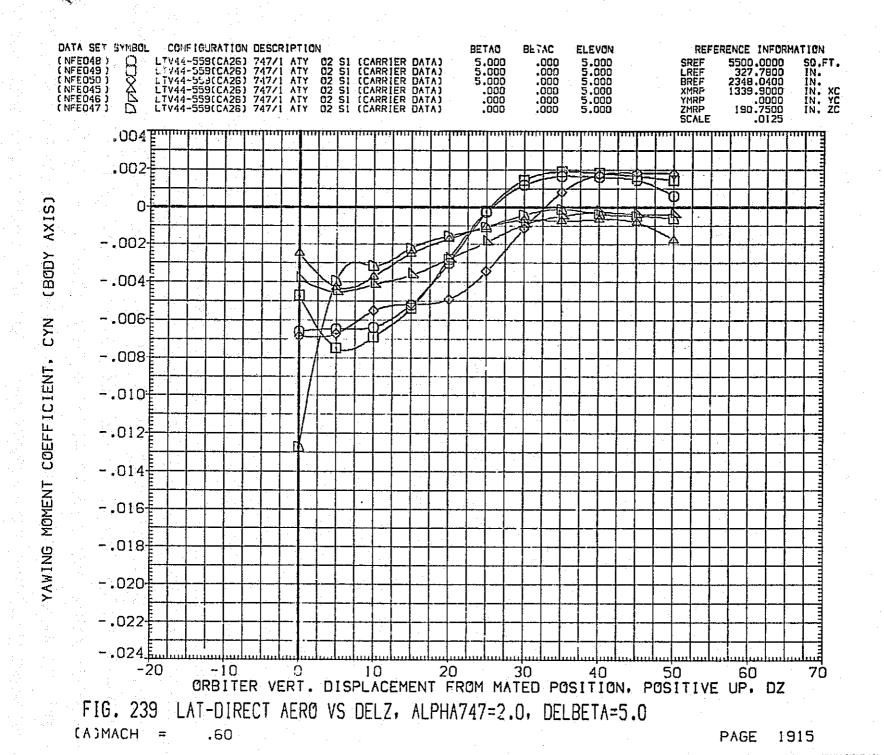
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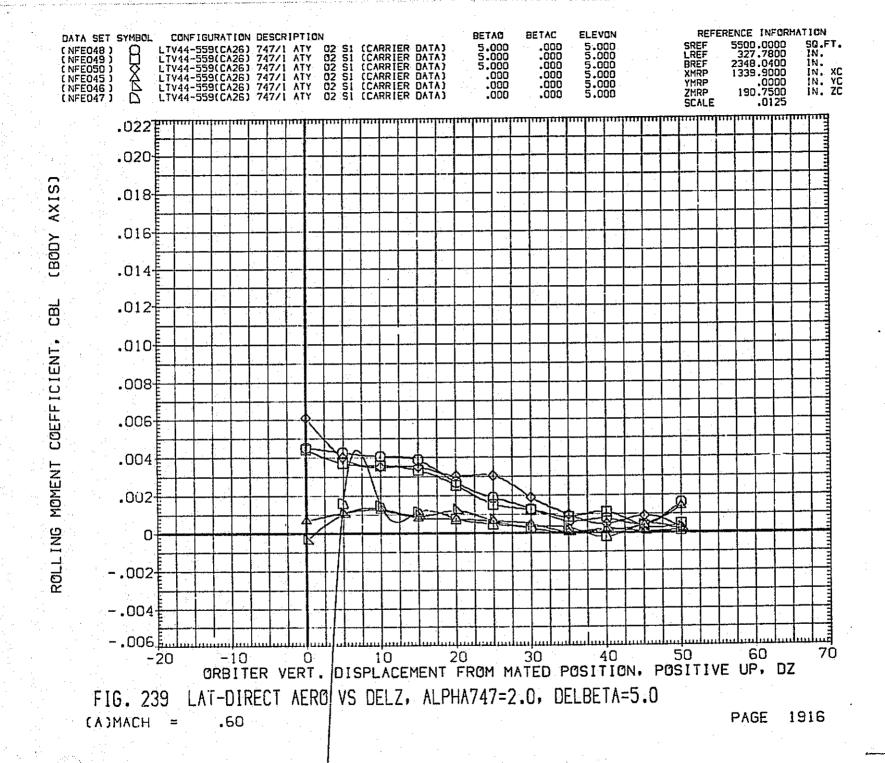


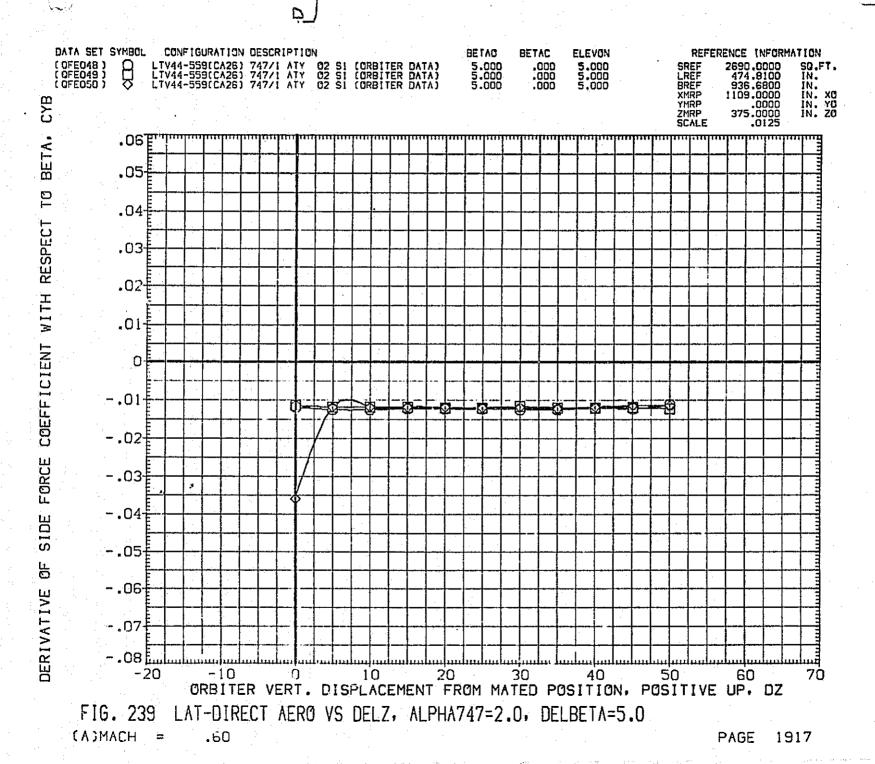


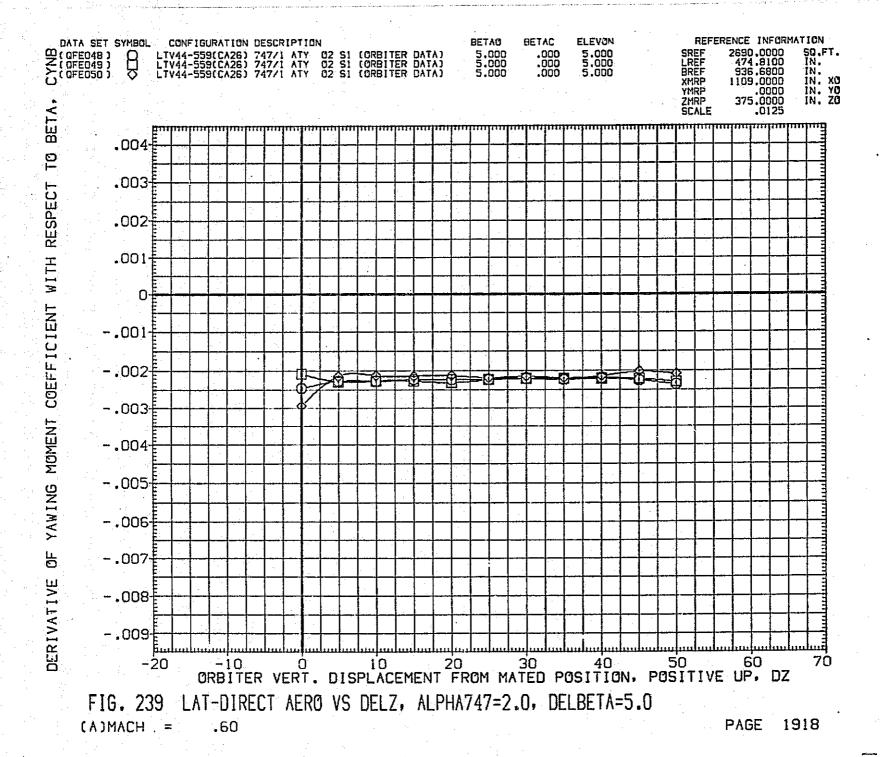


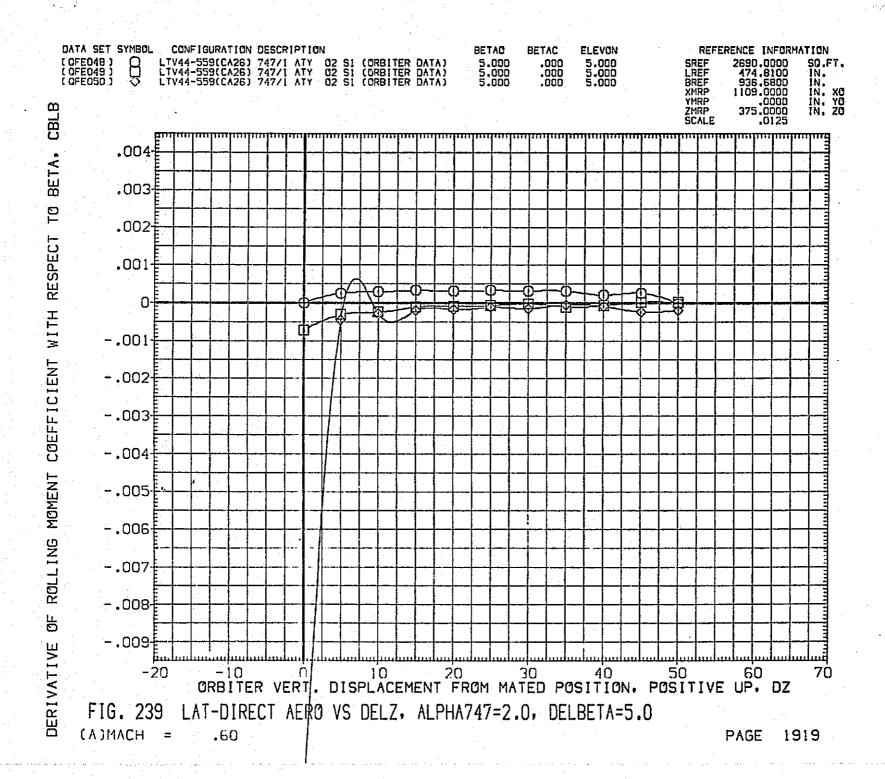


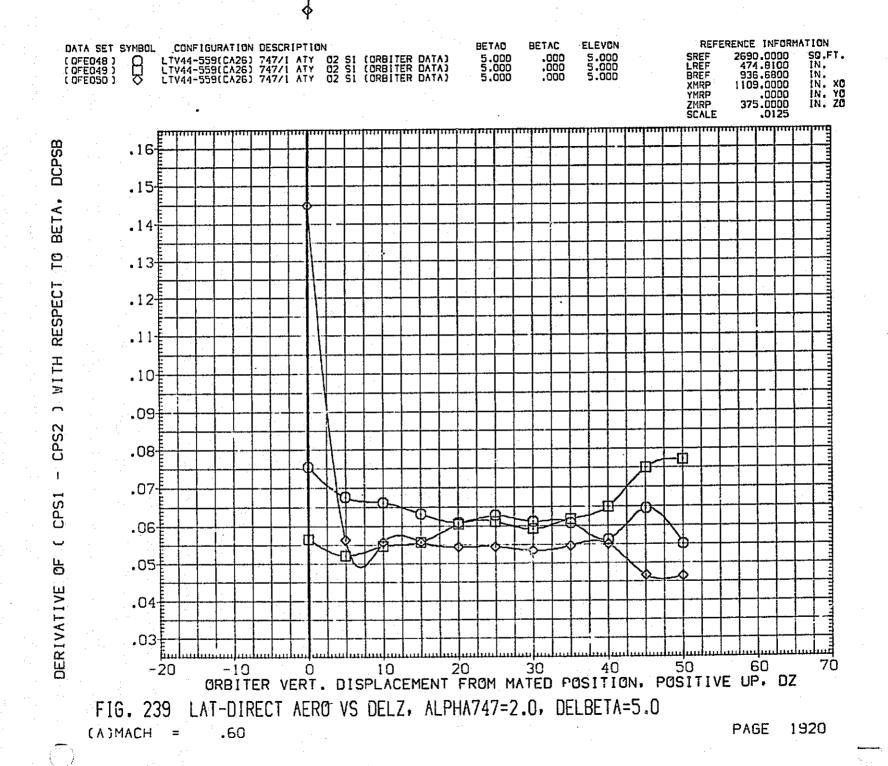


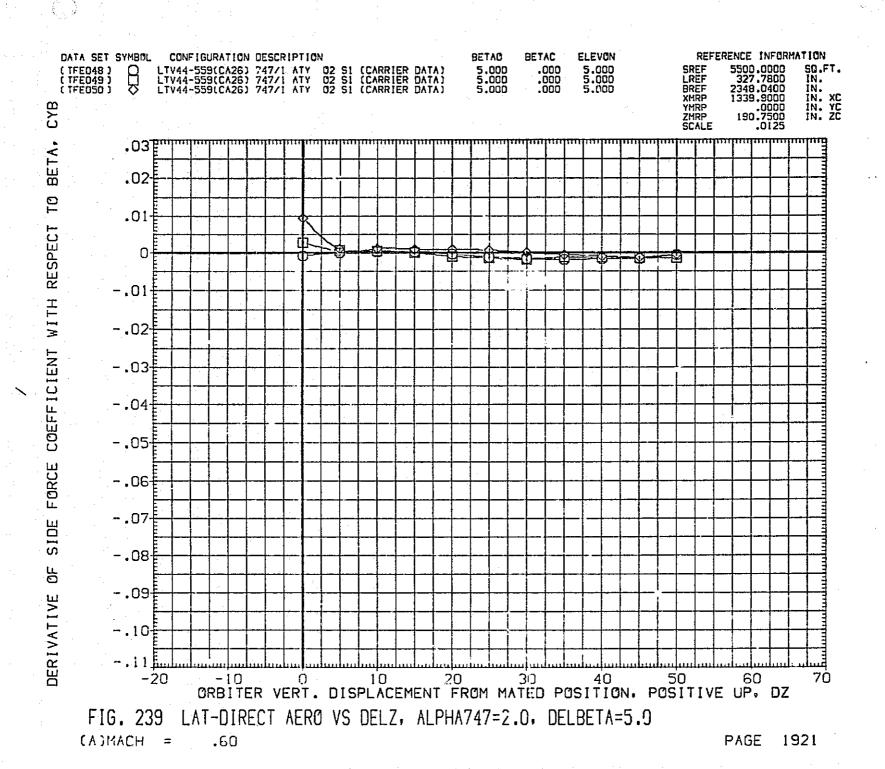


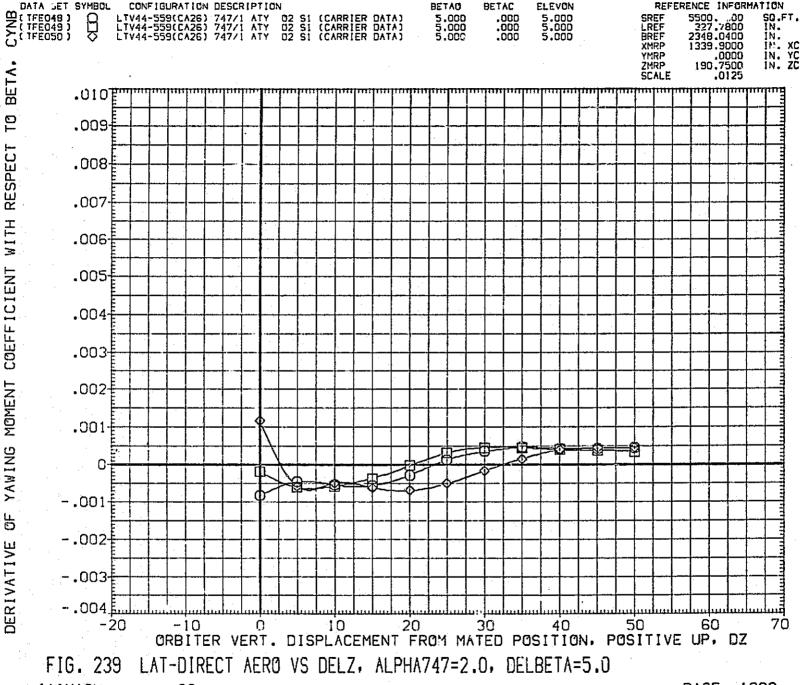




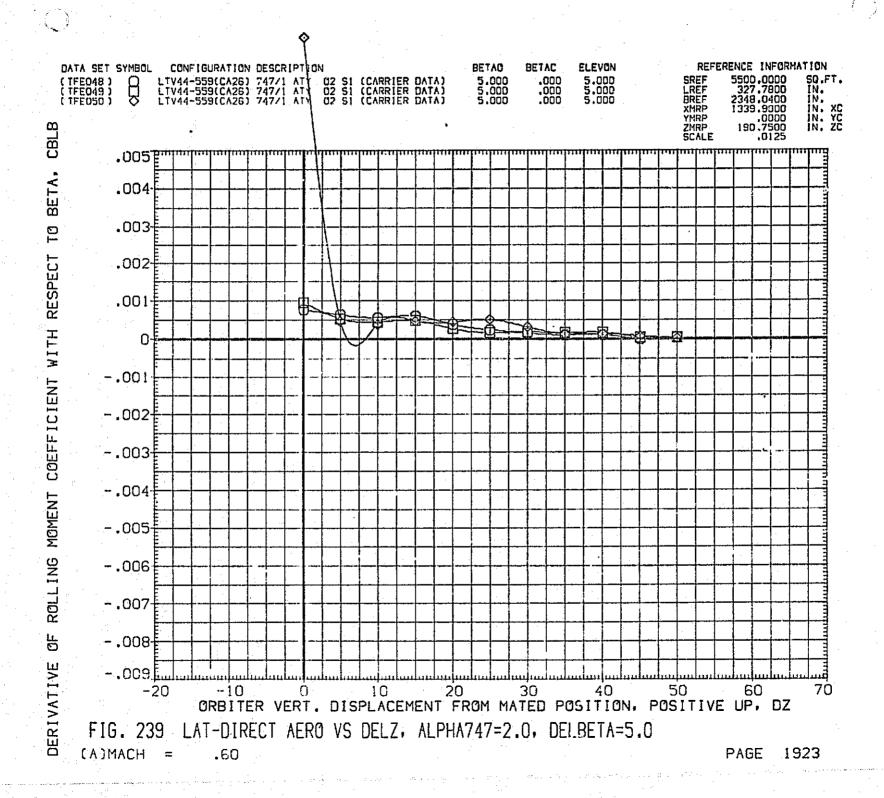


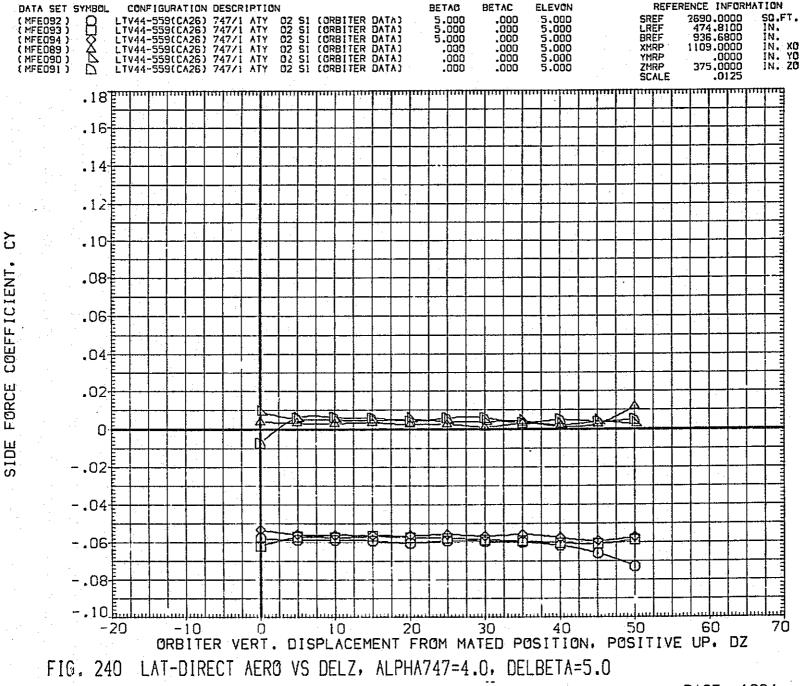






.60 PAGE 1922 (A)MACH





(A)MACH = .60

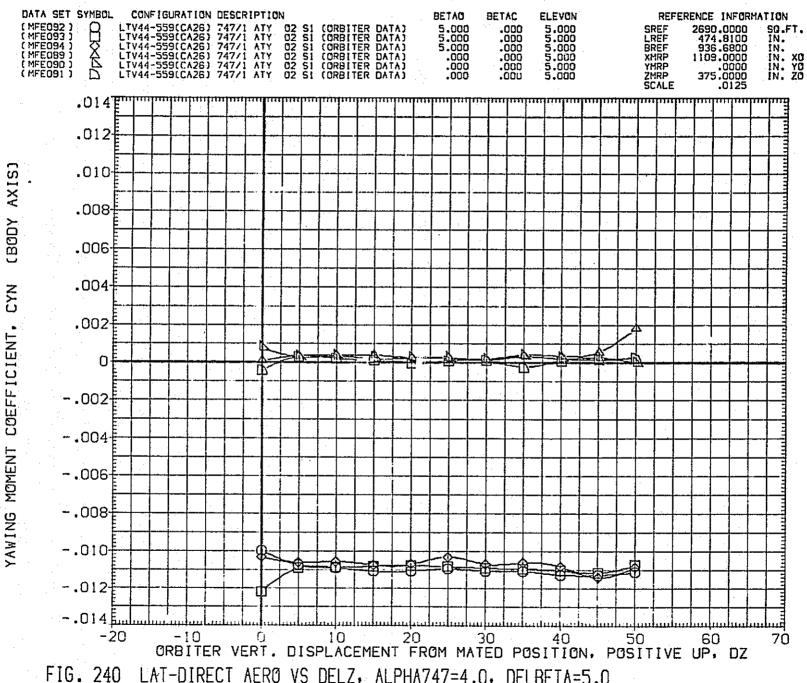
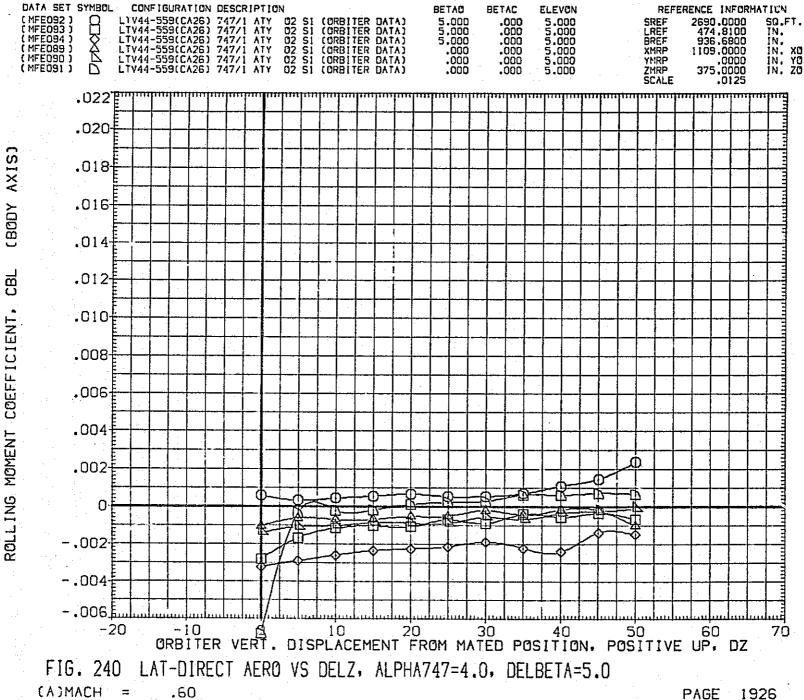


FIG. 240 LAT-DIRECT AERO VS DELZ, ALPHA747=4.0, DELBETA=5.0



(A)MACH = .60

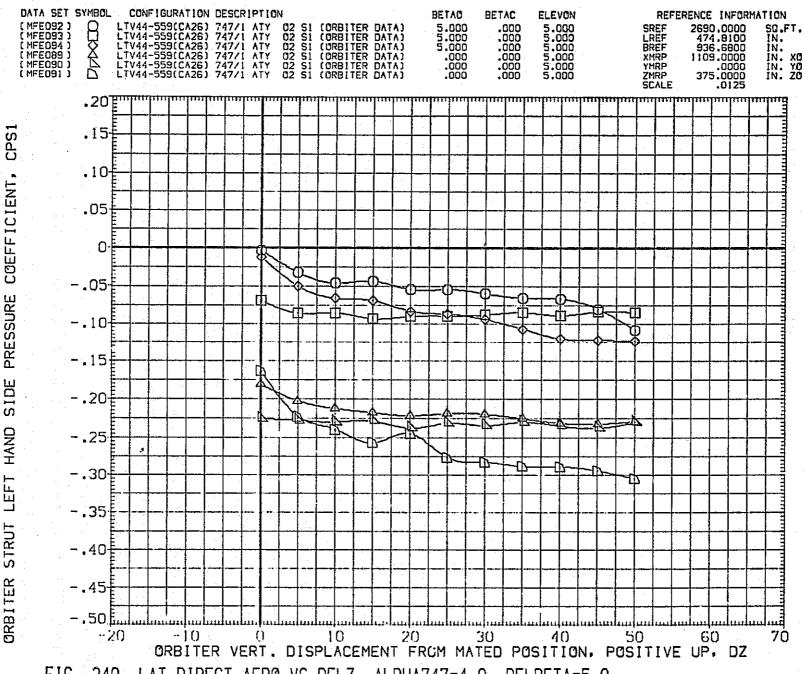
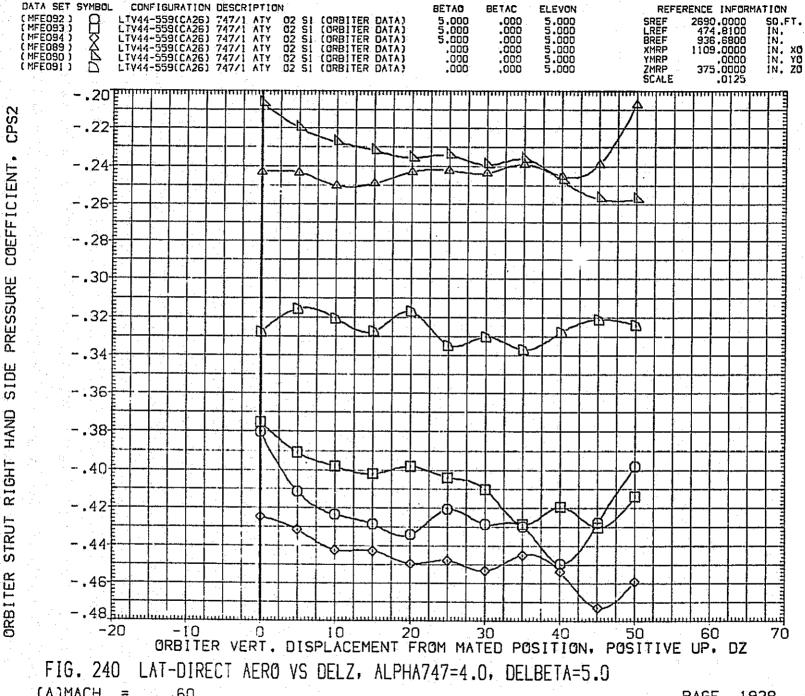
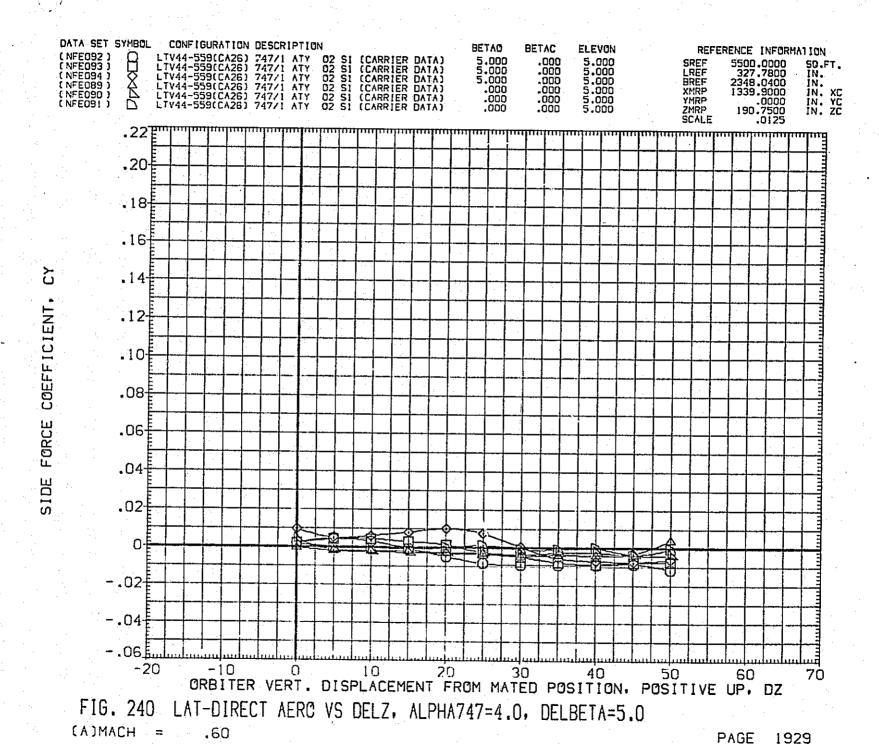


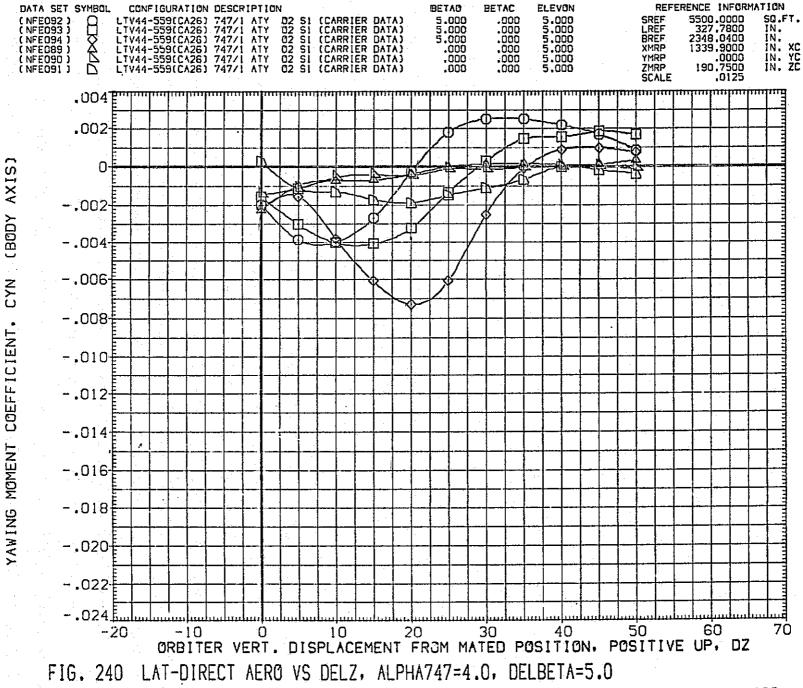
FIG. 240 LAT-DIRECT AERO VS DELZ, ALPHA747=4.0, DELBETA=5.0

(A)MACH = .60

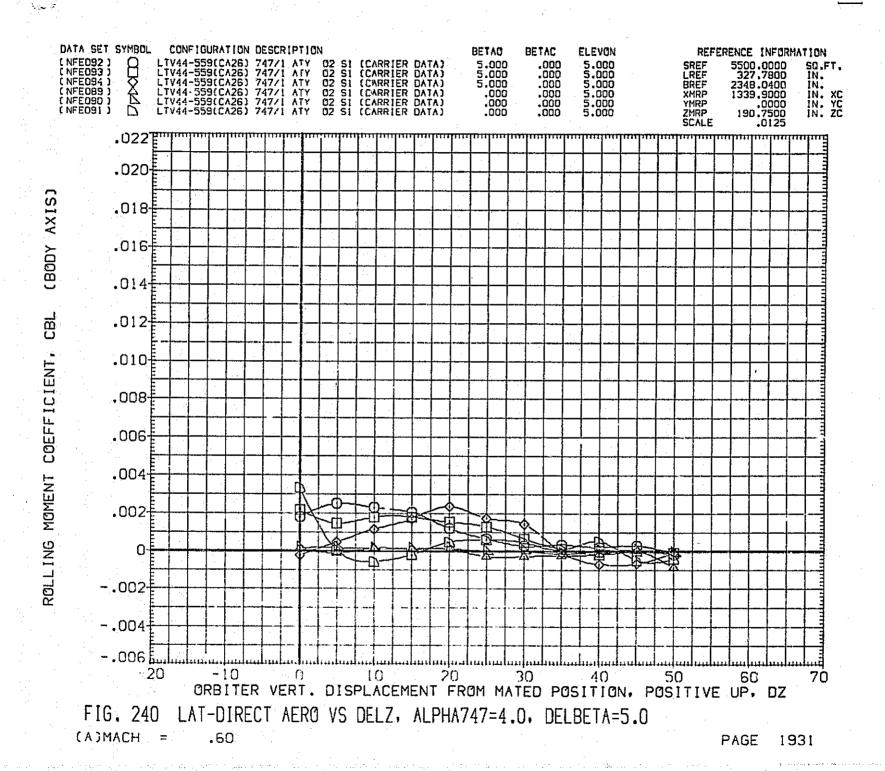


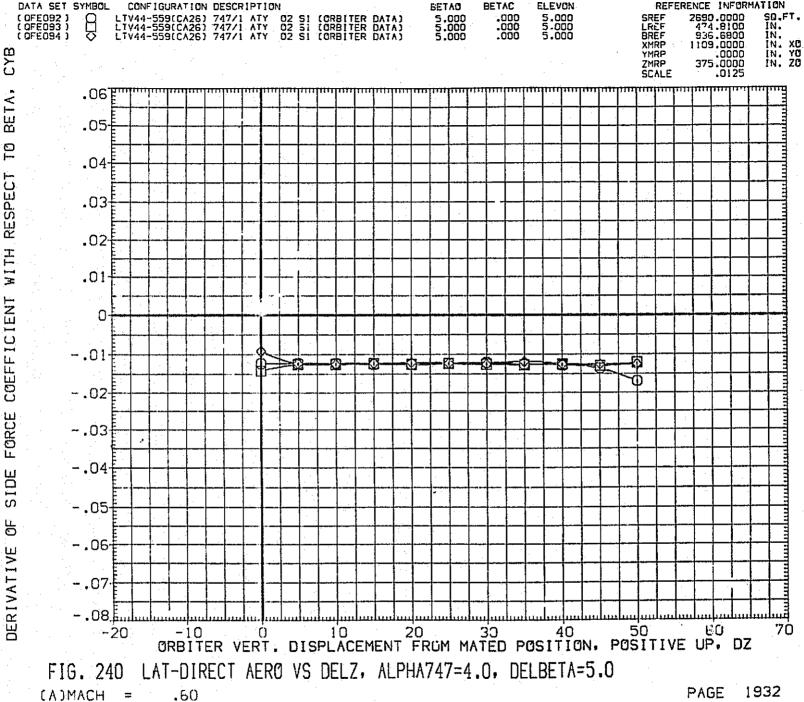
(A)MACH = .60

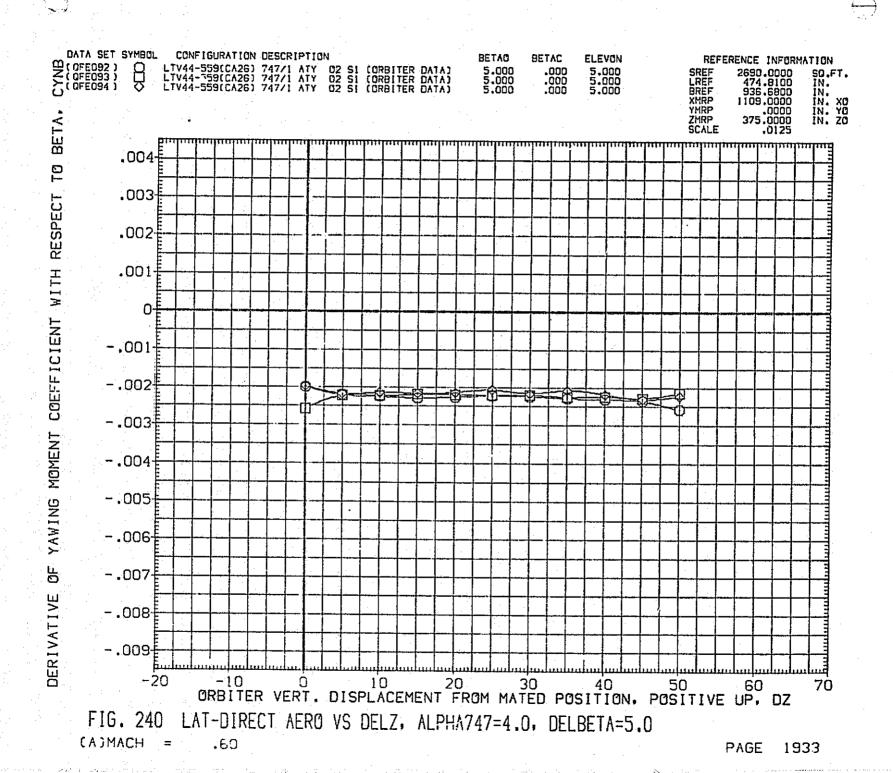


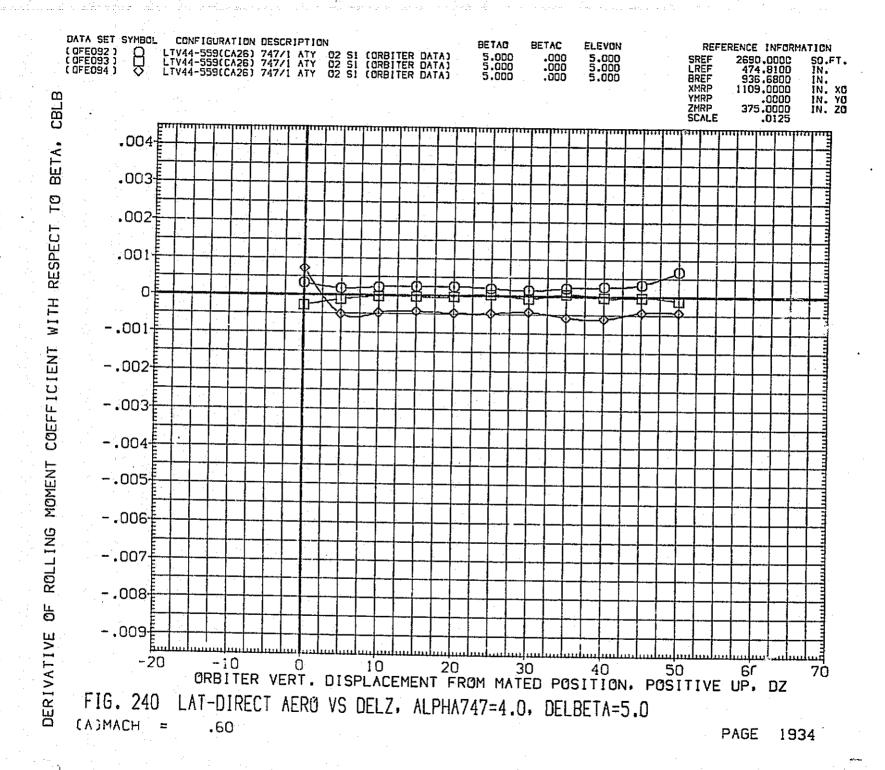


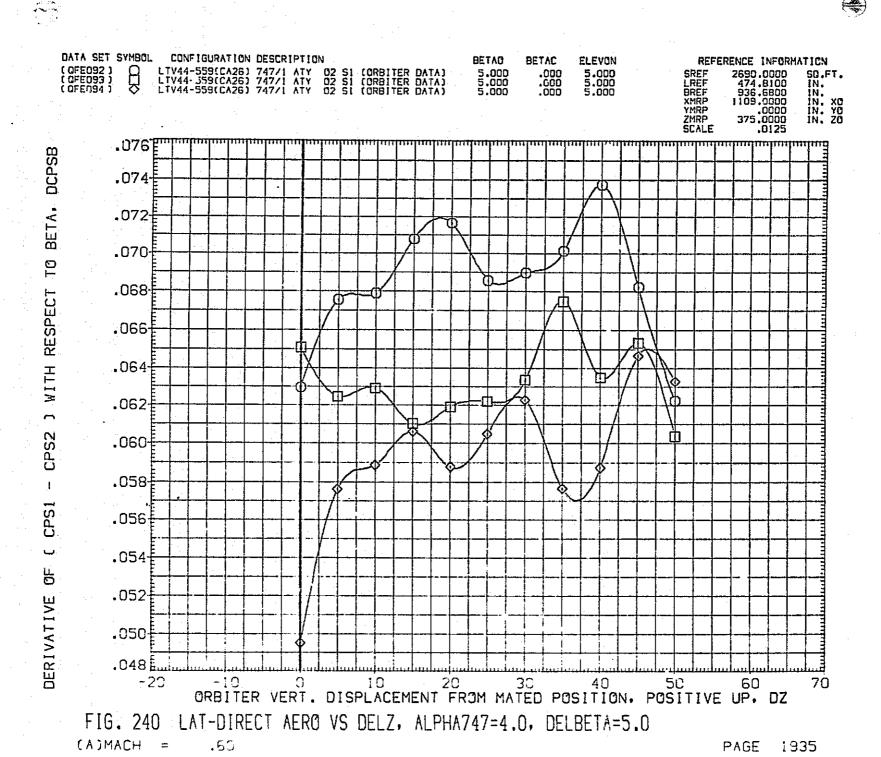
CADMACH = .60

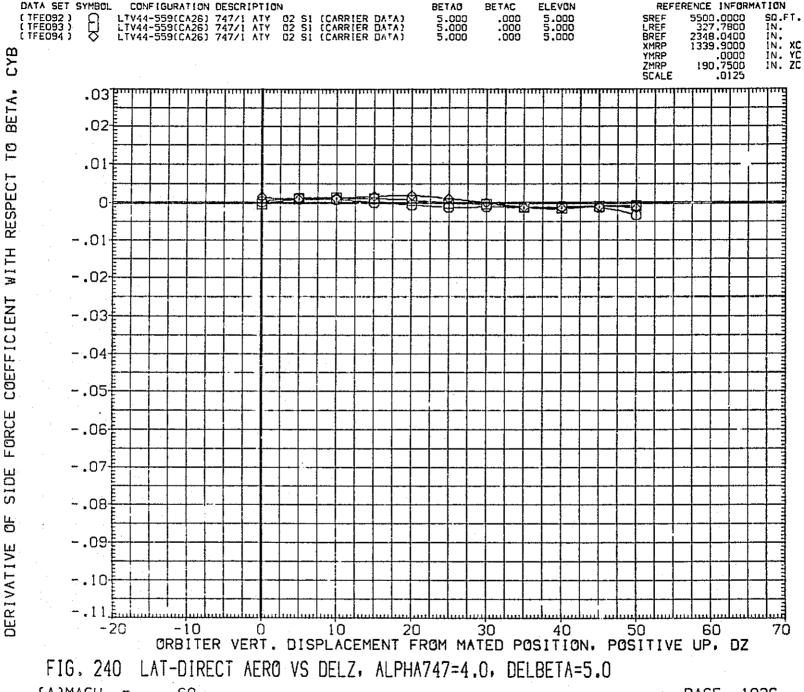












(A)MACH =.60

